Service Manual

Color Television

CHASSIS : CN-200I/A

NTSC-M SYSTEM

MODEL: DTQ-26S1FC/FS/FSP(CN-200I)

DTQ-29S1FCN/FSN/FSP(CN-200I)

DTQ-26S1HC/HS/HSP(CN-200A)

DTQ-29S1HC/HS/HSP(CN-200A)



DAEWOO ELECTRONICS CO., LTD.
OVERSEAS SERVICE DEPT.

FEATURES

- FS (Frequency Synthesizer) Tuning System
- CATV Ready
- Monitor Look Design
- A/V IN. (Stereo)
- Stereo/Mono Function

ELECTRICAL SPECIFICATIONS

POWER INPUT	
FC SERIES	AC 120V 60Hz
FS SERIES	AC 85V ~ AC 150V 60Hz
FSP SERIES	AC 220V 50Hz/60Hz
POWER RATING	
26” MODELS	100W
29” MODELS	105W
INTERMEDIATE FREQUENCIES	
PICTURE IF CARRIER FREQUENCY	45.75MHz
SOUND IF CARRIER FREQUENCY	41.25MHz
COLOR SUB CARRIER FREQUENCY	42.17MHz
AUDIO OUTPUT RATING	1.2W × 2
SPEAKER	2W 8 ohm × 2
ANTENNA INPUT IMPEDANCE	VHF/UHF 75 ohm UNBALANCED
TUNING RANGES	
VHF	2 THRU 13
UHF	14 THRU 69
CATV	1 THRU 125

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Product safety servicing guidelines for color television receivers

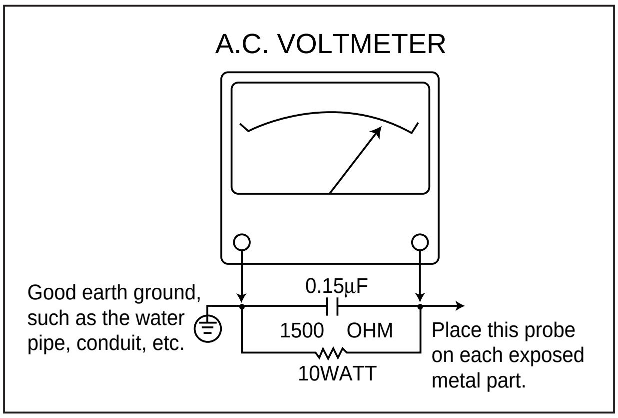
CAUTION : Do not attempt to modify this product in any way. Unauthorized modifications will not only void the warranty, but may lead to your being liable for any resulting property damage or user injury.
Service work should be performed only after you are thoroughly familiar with all of the following safety checks and servicing guidelines. To do otherwise, increases the risk of potential hazards and injury to the user.

SAFETY CHECKS

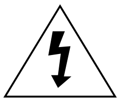
After the original service problem has been corrected, a check should be made of the following:

SUBJECT : FIRE & SHOCK HAZARD

1. Be sure that all components are positioned in such a way as to avoid possibility of adjacent component shorts. This is especially important on those chassis which are transported to and from the repair shop.
2. Never release a repair unless all protective devices such as insulators, barriers, covers, shields, strain reliefs, and other hardware have been reinstalled per original design.
3. Soldering must be inspected to discover possible cold solder joints, frayed leads, damaged insulation (including A.C. cord), solder splashes or sharp solder points. Be certain to remove all loose foreign particals.
4. Check for physical evidence of damage or deterioration to parts and components, and replace if necessary follow original layout, lead length and dress.
5. No leads or components should touch a receiving tube or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces must be avoided.
6. All critical components such as fuses, flameproof resistors, capacitors, etc. must be replaced with exact factory types. Do not use replacement components other than those specified or make unrecommended circuit modifications.
7. After re-assembly of the set always perform an A.C. leakage test on all exposed metallic parts of the cabinet, (the channel selector knob, antenna terminals, handle and screws) to be sure the set is safe to operate without danger of electrical shock. **Do not use a line isolation transformer during this test.** Use an A.C. voltmeter, having 5000 ohms per volt or more sensitivity, in the following manner : connect a 1500 ohm 10 watt resistor, paralleled by a 15 mfd. 150V A.C. type capacitor between a known good earth ground 9water pipe, conduit, etc.) and the exposed metalic parts, one at a time. Measure the A.C. voltage across the combination of 1500 ohm resistor and 0.15 MFD capacitor. Reverse the A.C. plug and repeat A.C. voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.75 volts R.M.S. This corresponds to 0.5 milliamp A.C. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



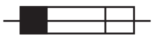
GRAPHIC SYMBOLS :



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the service personnel to the presence of uninsulated “dangerous voltage” that may be of sufficienty magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the service personnel to the presence of important safety information in service literature.



Fuse symbol is printed on pcb adjacent to the fuse, with ‘RISK OF FIRE REPLACE FUSE AS MARKED’. The symbol is explained in the service manual with the following wording or equivalent.
“CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE” and “ATTENTION: AFIN D’ ASSU UNE PROTECTION PERMANENTE CONTRE LES RISQUES D’ INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE ET DE 4A, 125V”.

SUBJECT : X-RADIATION

1. Be sure procedures and instructions to all service personnel cover the subject of X-rays in current T.V. receivers is the picture tube. However, this tube does not emit X-rays when the high voltage is at the factory specified level. The proper value is given in the applicable schematic. Operation at higher voltages may cause a failure of the picture tube or high voltage supply and, under certain circumstances, may produce radiation in excess of desirable levels.
2. Only factory specified C.R.T. anode connectors must be used. Degaussing shields also serve as X-ray shield in color sets. Always re-install them.
3. It is essential that the serviceman has available an accurate and reliable high voltage meter. The calibration of the meter should be checked perio - dically against a reference standard. Such as the one available at your distributor.
4. When the high voltage circuitry is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be run up and down while monitoring the high voltage with a meter to be certain that the high voltage does not

exceed the specified value and that it is regulating correctly. We suggest that you and your service orgainzation review test procedures so that voltage regulation is always checked as a standard servicing procedure. And that the high voltage reading be recorded on each customer' s invoice.

5. When troubleshooting and making test measurements in a receiver with a problem of excessive high voltage, avoid being unnecessarily close to the picture tobe and the high voltage compartment.
   Do not operate the chassis longer than is necessary to locate the cause of excessive voltage.
6. Refer to HV, B+and Shutdown adjustment procedures described in the appropriate schematic and diagrams(where used).

SUBJECT : IMPLOSION

1. All direct viewed picture tubes are equipped with an integral implosion protection system, but care should be taken to avoid damage during installation. Avoid scratching the tube. If scratched, replace it.
2. Use only recommended factory replacement tubes.

SUBJECT : TIPS ON PROPER INSTALLATION

1. Never install any receiver in closed-in recess, cubbyhole or closely fitting shelf space over, or close to heat duct, or in the path of heated air flow.
2. Avoid conditions of high humidity such as : Outdoor patio installations where dew is a factor. Near steam radiators where steam leakage is a factor, etc.
3. Avoid placement where draperies may obstruct rear venting. The customer should also avoid the use of decorative scarves or other coverings which might obstruct ventilation.
4. Wall and shelf mounted installations using a commercial mounting kit, must follow the factory approved mounting instructions. A receiver mounted to a shelf or platform must retain its original feet(or the equivalent thickness in spacers) to provide adequate are flow across the bottom, blots or screws used for fasteners must not touch and parts or wiring. Perform leakage test on customized installations.
5. Caution customers against the mounting of a receiver on sloping shelf or a tilted position, unless the receiver is properly secured.
6. A receiver on a roll-about cart should be stable on its mounting to the cart. Caution the customer on the hazards of trying to roll a cart with small casters across thresholds or deep pile carpets.
7. Caution customers against the use of a cart or stand which has not been listed by underwriters laboratories, inc. For use with their specific model of television receiver or generically approved for use with T.V.' s of the same or larger screen size.

Product safety servicing guidelines for color television receivers

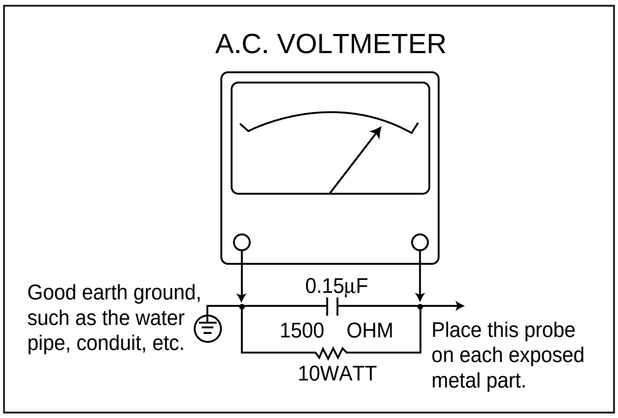
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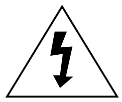
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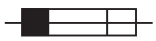
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4. When the high voltage circuitry is operating properly there is no possibility of an X-radiation problem. Every time a color chassis is serviced, the brightness should be run up and down while monitoring the high voltage with a meter to be certain that the high voltage does not

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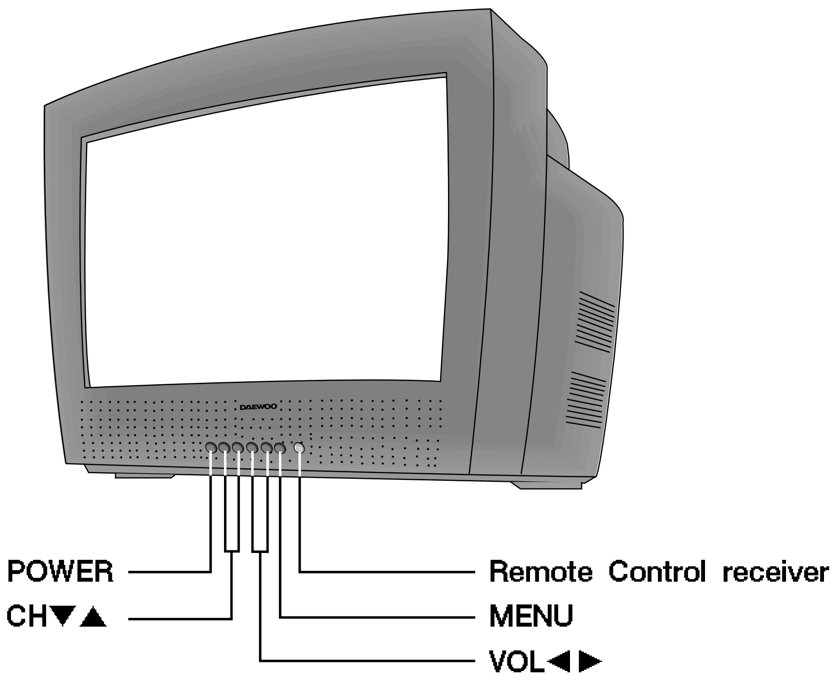
SUBJECT : IMPLOSION

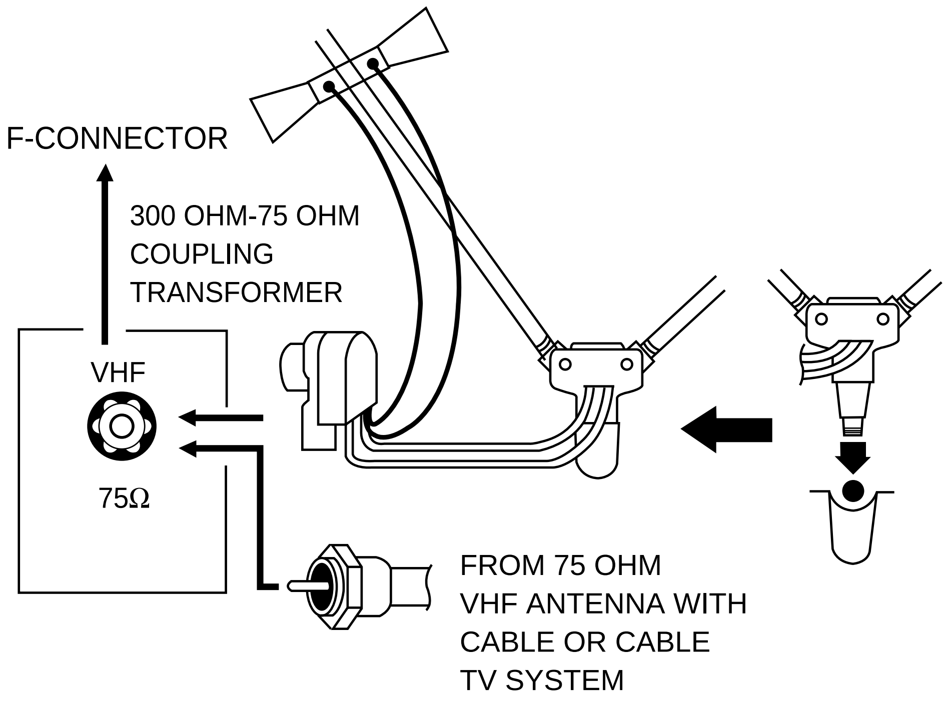
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CONTROL VIEW



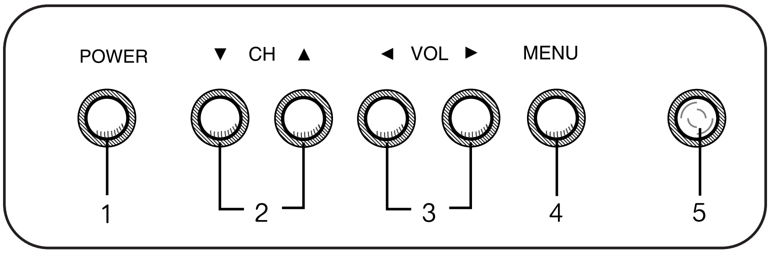


1. Overview of Your Equipment

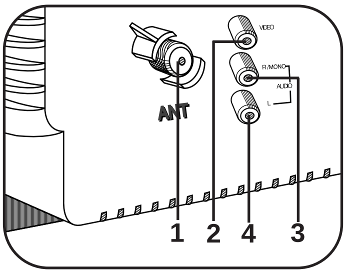
Your TV comes with a remote control. The section below summarizes the buttons,controls, and terminals that you will use with your TV.

2. Your TV' s Front Panel

1. POWER
   Use this buttom to turn your TV on or off.
2. ▼CH▲
   Use these buttom to change channels on your TV, or to select items in the menu system.
3. ◀VOL▶
   Use these buttom to change your TV' s volume, to activate selections in the menu system, or to change audio and video settings.
4. MENU
   Use this buttom to turn the TV' s menu system on and off.
5. Remote control receiver
   This receiver receives a signal from your remote control. Do not block it.



3. Your TV' s Back Panel



1. Antenna terminal
   Use this terminal to attach an antenna or cable system to your TV.
2. VIDEO IN
   This terminal allows the TV to receive a video signal from another components, such as a VCR.
3. AUDIO R/MONO IN
   This terminal allows the TV to receive an audio R/MONO signal from another components, such as a VCR.
4. AUDIO L IN
   This terminal allows the TV to receive an audio L signal from another components, such as a VCR.

IMPORTANT SERVICE NOTES

1. X-RAY RADIATION PRECAUTION

1) Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 27kv at zero beam current (minimum brightness) under a 120V AC power source. The high voltage must not, under any circumstances, exceed 32kv. Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure on page 3 of this manual. It is recommended as a parts of the service record. It is important to use an accurate and reliable high voltage meter.
2) This receiver is equipped with X-RADIATION PROTECTION circuit which prevents the receiver from producing an excessively high voltage even if the B+voltage increases abnormally. Each time the receiver is serviced, X-RADIATION PROTECTION circuit must be checked to determine that the circuit is properly functioning, following the X-RADIATION PROTECTION CIRCUIT CHECK procedure on page 3 of this manual.
3) The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4) Some parts in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

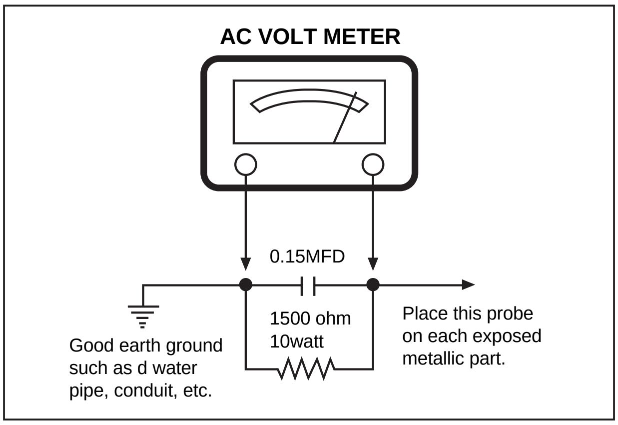
2. SAFETY PRECAUTION

WARNING: Service should not be attempted by anyone unfamiliar with the necessary precaution on this receiver. The following are the necessary precaution to be observed before servicing.

1) Since the chassis of this receiver has hazardous potential to ground whenever the receiver is plugged in (floating chassis), an isolation transformer must be used during servicing to avoid shock hazard.
2) Always discharge the picture tube anode to the CRT conductive coating the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatterproof goggles and keep picture tube away from the body while handling.
3) When placing chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; nonmetallic control knobs, insulating covers, shields, isolation resistor-capacitor network, etc.
4) Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screw-heads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner.

   Connect at 1500 ohm 10 watt resistor, paralleled by a 0.15 mfd. AC type capacitor, between a known good earth ground (water pipe, conduit etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 mfd capacitor. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2 millliamp. AC. Any value exceeding the limit constitutes a potential shock hazard and must be corrected immediately.

* Minimum brightness



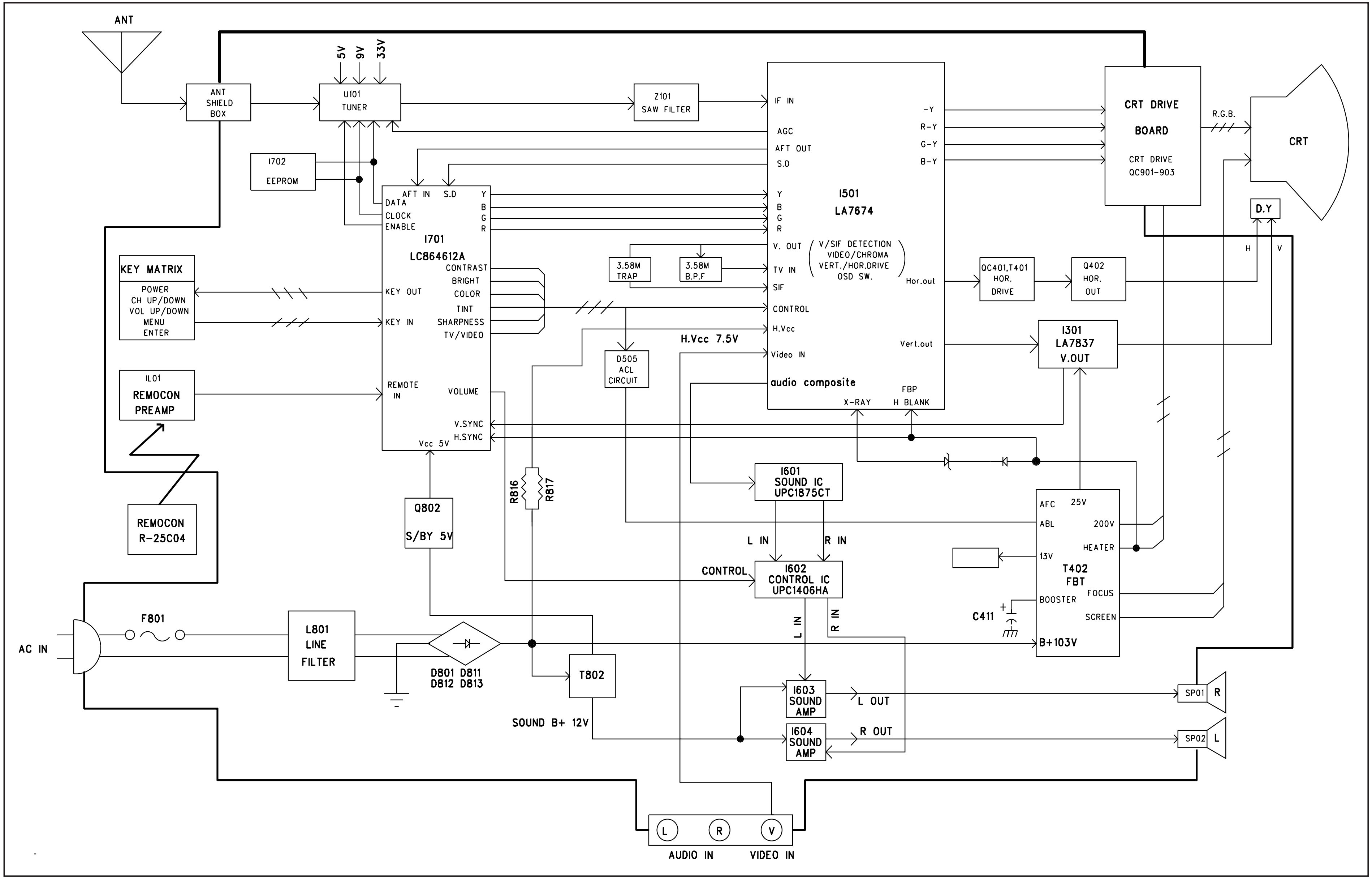
3. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by shading on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create X-ray radiation or other hazards.

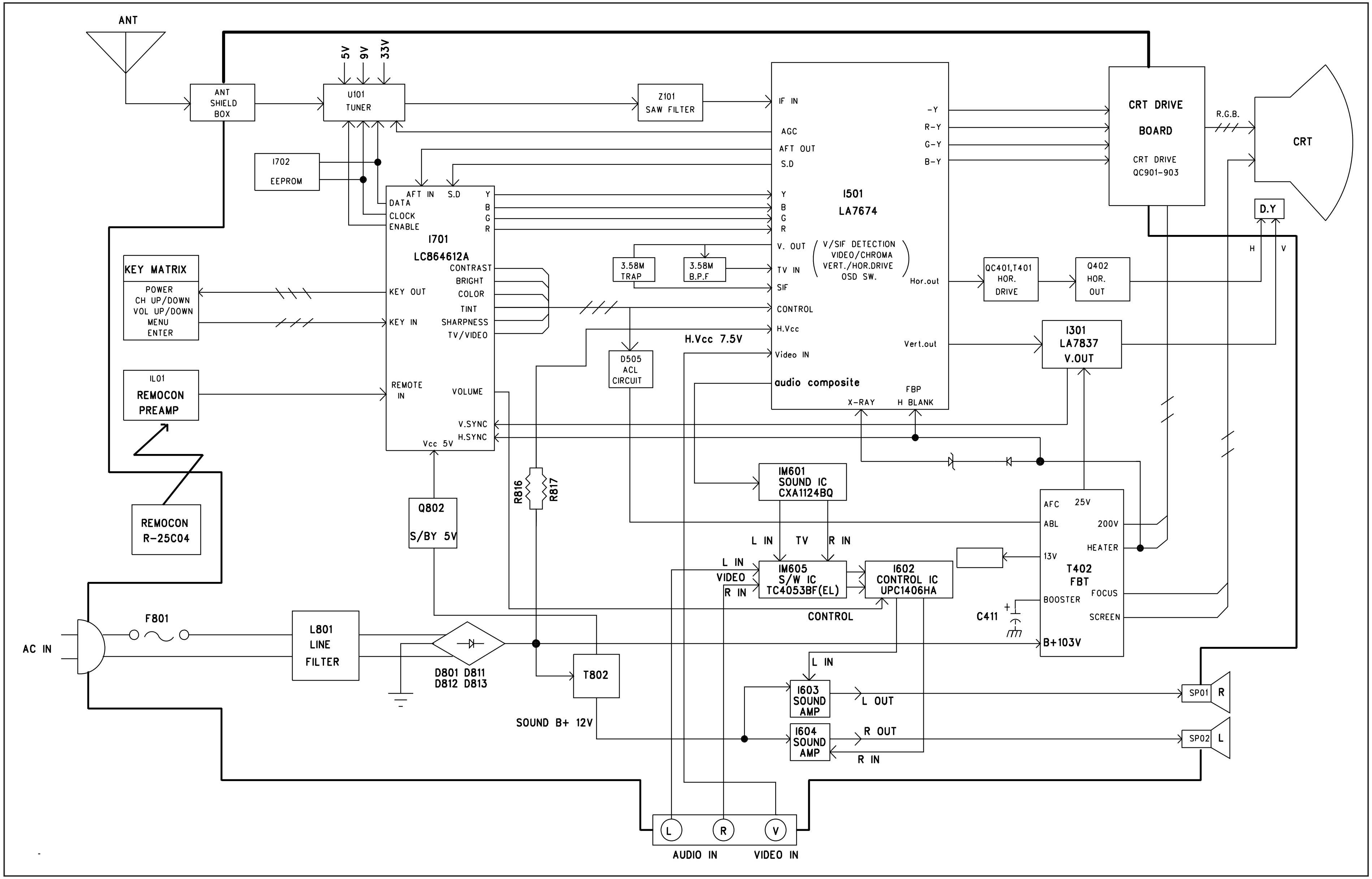
4. SERVICE NOTES

1) When replacing parts or circuit boards, clamp or bend the lead wires to terminals before soldering.
2) When replacing a high wattage resistor (metal oxide film resistor) in the circuit board, keep the resistor min 1/2 inch away form circuit board.
3) Keep wires away from high voltage or high temperature components.

BLOCK DIAGRAM (CN-200I)



BLOCK DIAGRAM (CN-200A)



GENERAL ADJUSTMENTS

1. GENERAL

In the majority of cases, all color televisions will need only slight touch-up adjustment upon installation. Check the basic characteristics such as height, focus and sub- basic characteristics such as height, focus and sub- bright. Observe the picture for good black and white details without objectionable color shading.

2. VERTICAL HEIGHT ADJUSTMENT

1) Tune in an active channel.
2) Adjust brightness and contrast controls for a good picture.
3) Adjust vertical height control (R305) for approximately one half inch over scan at top and bottom of picture screen.
4) Vertical centering adjustment R310
   Horizontal centering adjustment R516.

3. FOCUS ADJUSTMENT

1) Tune in an active channel.
2) Adjust brightness, sharpness and contrast controls for a good picture.
3) Adjust focus control (part of T402) for sharp scanning lines and/or sharp picture.

4. RF AGC ADJUSTMENT

1) Tune in an active channel.
2) Using the attenuator, apply the signal of 60dBm to the antenna input terminal.
3) Turn RF AGC control (R113) full clockwise until snow or/and noise appears in the picture, then slowly turn control counter clockwise until snow or/and noise disappears.

5. HIGH VOLTAGE CHECK

High voltage is not adjustable but must be checked to verify that the receiver is operating within safe and efficient design limitations as specified:

1) Operate Receiver for at least 15 minutes at 120V AC line.
2) Set brightness sharpness, contrast and color control to minumum position (Zero beam).
3) Connect accurate high voltage meter to CRT anode. The reading should be 26kv~28kv

If a correct reading cannot be obtained, check circuity for malfunctioning components.

6. X-RADIATION PROTECTION CIRCUIT TEST

When service has been performed on the horizontal deflection system, high voltage system or B+system, the X-RADIATION protection circuit must be tested for proper operation as follows:

1) Operate receiver for at least 15 minutes at 120V AC line.
2) Adjust all customer controls for normal picture and sound.
3) Short R414(X-RAY Short test), and remove short clip.
4) If the operation of horizontal osc. does not stop in step The circuit must be repaired, before the set is returned to the customer.

7. CRT GRAY SCALE ADJUSTMENT

1) Tune in an active channel.
2) Set the COLOR control to minimum.
3) Turn the SCREEN control (on T402 fully counter-clockwise.)
4) Rotate the RED, GREEN and BLUE BIAS controls (R917, R918, R919) counterclock wise from the maximum, set them to the position where notches in the knobs become parallel to the surface of P.C. Board.
5) Set the GREEN and BLUE DRIVE controls (R920, R921) to the mid position.
6) Turn the service switch SW901 (Service Position) on the CRT board.
7) Rotate the SCREEN control (on T402) gradually clockwise until the second horizontl line following the first line appears slightly on the screen. Then turn fully counterclockwise the two BIAS controls corresponding to the colors of the first and the second horizontal lines to eliminated the lines.
8) Set the SCREEN control to the position where the third horizontal line lights slightly on the screen.
9) Adjust the two BIAS control set to the minimum in item 7) above to obtain the slightly lighted horizontal line in the same levels of three (red, green, blue) colors. (The line should be white if the BIAS controls are adjusted properly.)
10) Turn the service switch SW901 again (Normal position on the CRT board.)
11) Press PICTURE-SEL, P-UP and set the brightness and contrast controls to the maximum.
12) Adjust the BLUE and GREEN DRIVE control to obtain proper white-blanced picture in high light areas.
13) Using P-SEL, P-DN key, set the brightness and contrast controls to obtain dark gray raster. Then check the white balance in low brightness. Of the white balance is not proper, retouch the BIAS controls and DRIVE controls to obtain a good white balance in both low and high light areas.

8. MAIN B+(103V) ADJUSTMENT

1) Tune in an active channel
2) Check TP10 (DC 103V Line) using D.V.M
3) Adjust voltage control (R809) for main B+(DC 103V)

9. SUB-BRIGHTNESS ADJUSTMENT

1) Tune in a color program.
2) Set the CONTRAST control to maximum and the BRIGHTNESS control to maximum and the SHARPNESS control to the center position.
3) Set the COLOR and TINT controls to center.
4) Set the SUB-BRIGHT control R522 to center and leave the receiver on five minutes in this state.
5) Watching the picture carefully, adjust the SUB-BRIGHT control in the position where the picture does not show evidence of blooming in high brightness area and not appear too dark in low bright area.
6) Check for BRIGHTNESS controls at both extremes.
7) If the picture does not appear dark with the CONTRAST and BRIGHTNESS control turned to minimum, or not appear bright with the controls turned to maximum, adjust the SUB-BRIGHT control again for an acceptable picture.

10. PICTURE IF/AFT ADJUSTMENTS

NOTE : THIS RECEIVER IS TRANSISTORIZED AND SPECIAL CARE MUST BE TAKEN WHEN SERVICING. READ THE FOLLOWING (NOTES BEFORE ATTEMPTING ALIGNMENT)

- Alignment requires an exacting procedure and should be undertaken only when necessary.
- Isolation transformer must be used to prevent shock hazard.
- The test equipment specified or its equivalent is required to perform the alignment properly. Use of equipment which does not meet these requirements may result in improper alignment.
- Accurate equipment is essential to obtain proper alignment of this receiver.
- Use of excessive signal from a sweep generator can cause overloading of receiver circuit Overloading should be avoided to obtain a true response curve. Insertion of markers from the marker generator should not cause distortion of the response curve.
- The AC Power line voltage should be kept 120 volts while alignment is being performed.
- Do not attempt to disconnect any components while the receiver is in operation.
  Make sure the power cord is disconnected before replacing any parts in the receiver.

TEST EQUIPMENT

Digital voltmeter	National Model VP-2600A or equivalent
Oscilloscope	Tektronix Model 2215A or equivalent.
Direct/Low-capacity probe	Tektronix Model P6120 or equivalent (Accessory of oscilloscope)
Color-Bar/Dot/Crosshatch generator	Tektronix Model 146 or equivalent.
PIF sweep marker generator	Nihon Tsushinki Model 4723 or equivalent
Power supply	Academy Model 150A or equivalent
Isolation transformer	Voltage adjustable type having capacity of at least 150 watts

BLOCK DIAGRAM

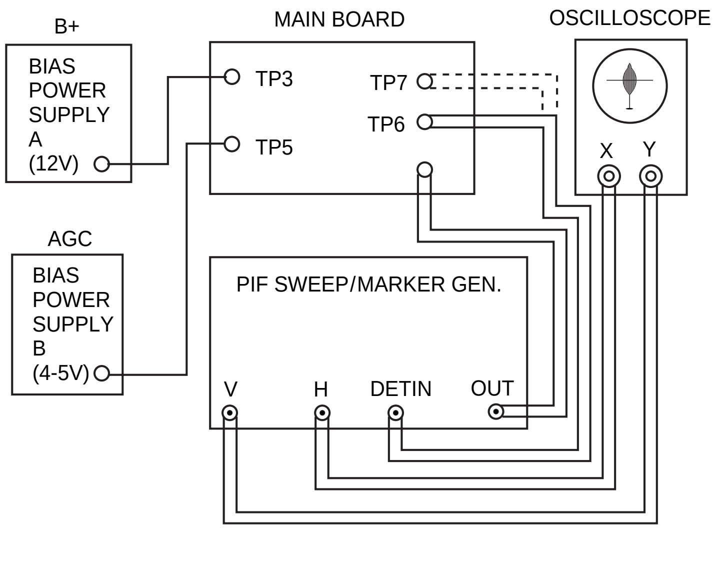


Fig. 5 Picture IF Sweep Alignment

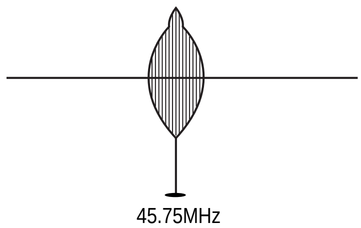


Fig. 6 PIF Response

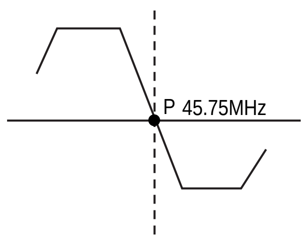
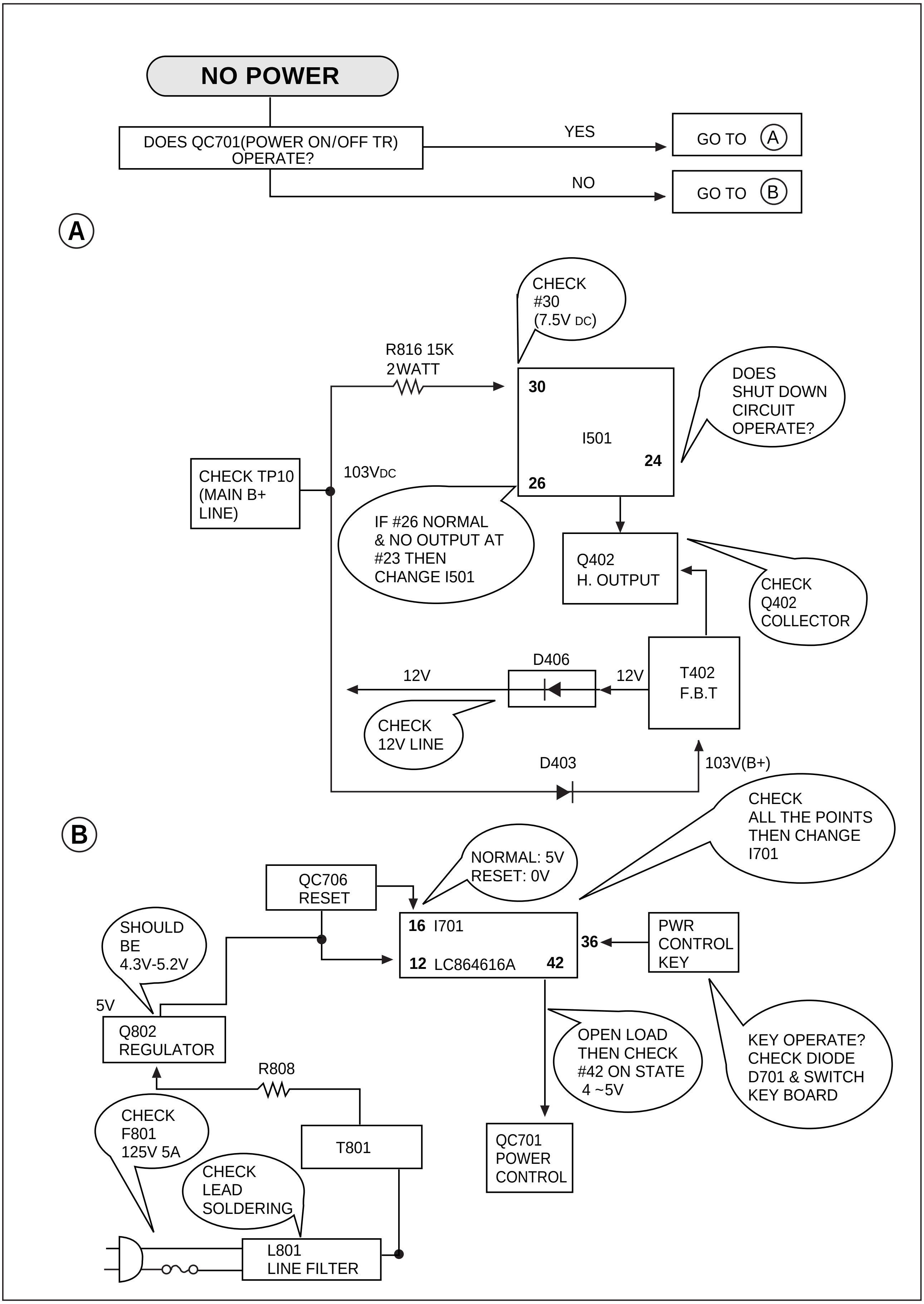
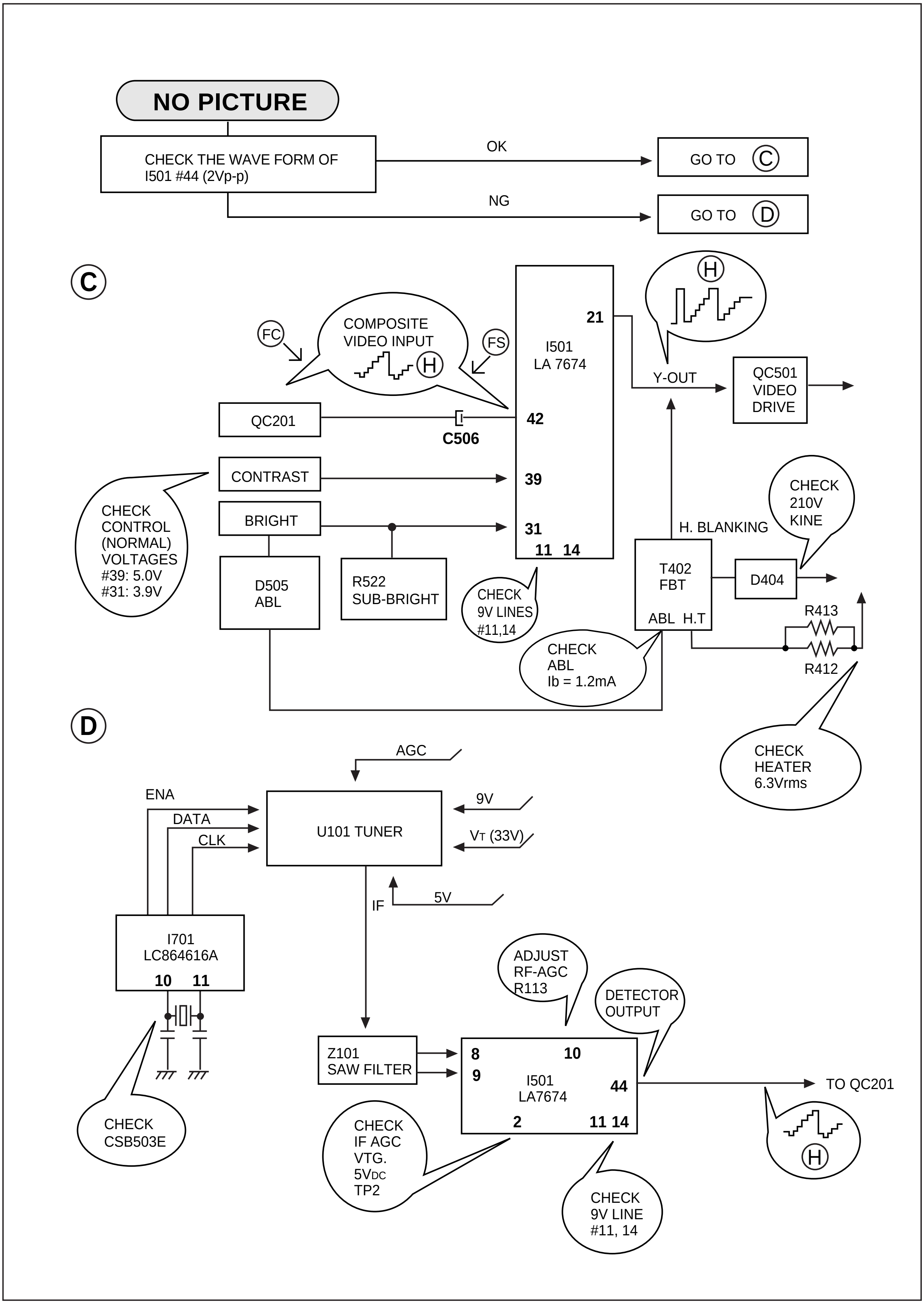


Fig. 7 AFT Response Curve

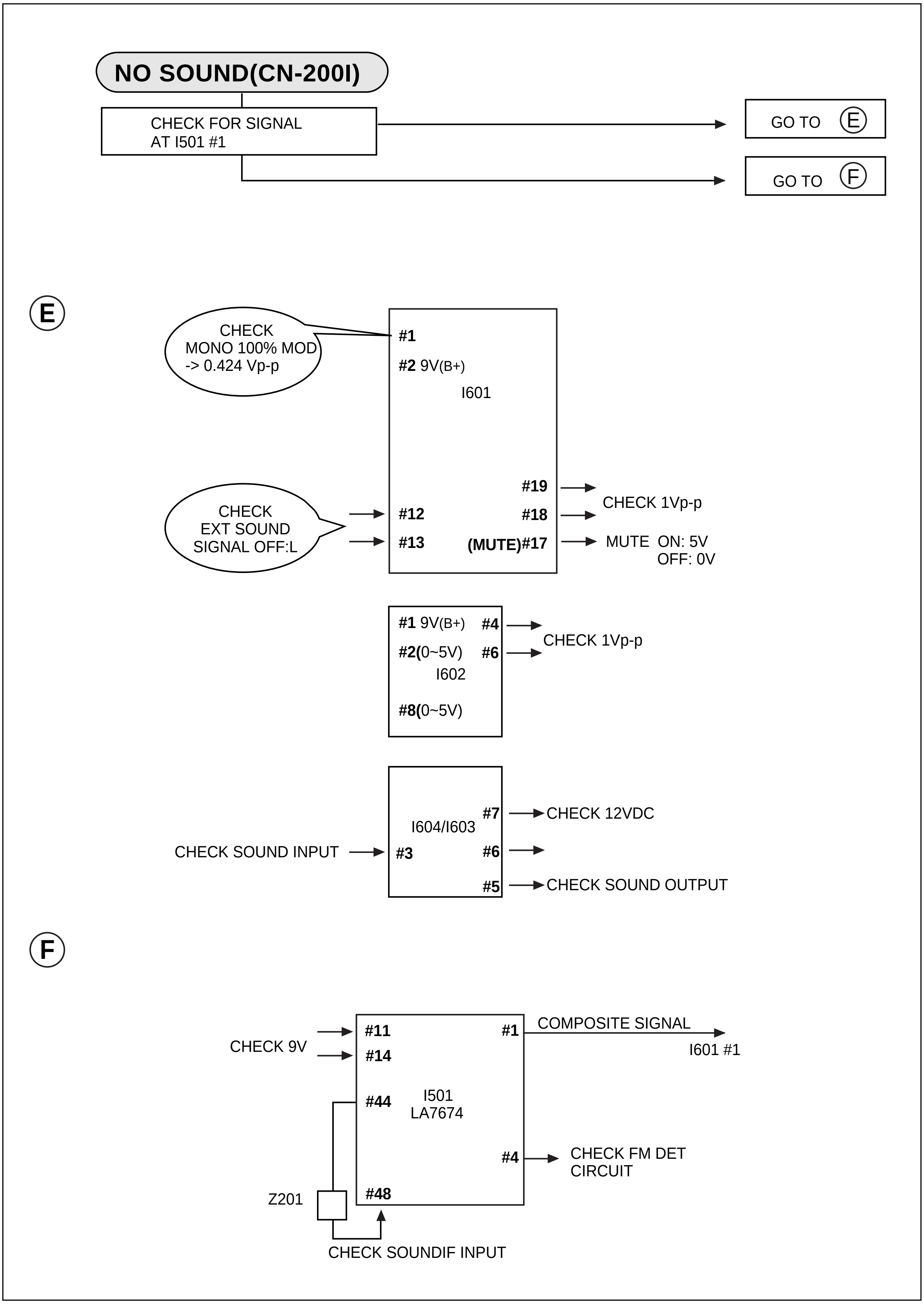
1) Disconnect the “TUNER IF” output from TP6 and connect equipment as shown above.
2) Set the sweep/marker generator for 30 Vrms.
3) Observe 1 Vp-p on scope by adjusting power supply B (4~5V).
4) Adjust PIF coil L505 for according beat signal with 45.75 MHz marker on scope (See Fig. 6).
5) Connect the ‘DET IN’ to TP7.
6) Adjust AFT coil L504 for center display at 45.75 MHz on scope (See Fig. 7).
7) After completing the above steps, disconnect equipment and adjust the AGC delay circuit as explained in the General Adjustments section of this manual.

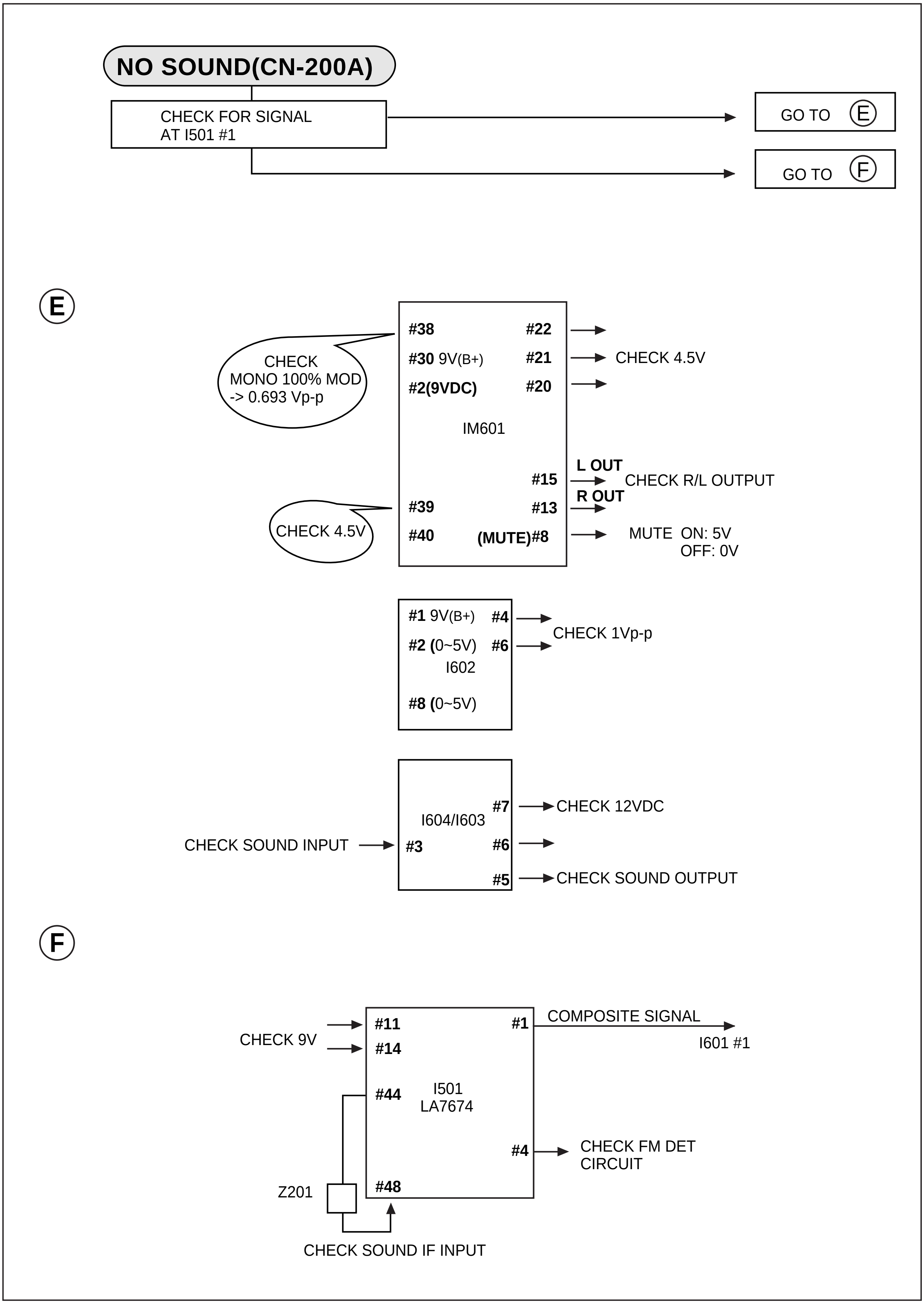
TROUBLE SHOOTING CHARTS





NO PICTURE
CHECK THE WAVE FORM OF I501 #44 (2Vp-p)
OK
GO TO C
NG
GO TO D
C
COMPOSITE VIDEO INPUT
H
FC
FS
I501 LA 7674
21
42
39
31
11 14
Y-OUT
QC501 VIDEO DRIVE
QC201
C506
CONTRAST
BRIGHT
D505 ABL
R522 SUB-BRIGHT
CHECK CONTROL (NORMAL) VOLTAGES #39: 5.0V #31: 3.9V
CHECK 9V LINES #11,14
H. BLANKING
T402 FBT
ABL H.T
D404
CHECK 210V KINE
CHECK ABL Ib = 1.2mA
R413
R412
CHECK HEATER 6.3Vrms
D
AGC
ENA
DATA
CLK
U101 TUNER
9V
VT (33V)
IF
5V
I701 LC864616A
10 11
CHECK CSB503E
ADJUST RF-AGC R113
DETECTOR OUTPUT
Z101 SAW FILTER
8
9
10
I501 LA7674
44
2
11 14
TO QC201
CHECK IF AGC VTG. 5VDC TP2
CHECK 9V LINE #11, 14


NO SOUND(CN-200I)
CHECK FOR SIGNAL AT I501 #1
GO TO E
GO TO F
E
CHECK MONO 100% MOD -> 0.424 Vp-p
#1
#2 9V(B+)
I601
CHECK EXT SOUND SIGNAL OFF:L
#12
#13
#19
#18
(MUTE)#17
CHECK 1Vp-p
MUTE ON: 5V
OFF: 0V
#1 9V(B+)
#2(0~5V)
I602
#8(0~5V)
#4
#6
CHECK 1Vp-p
CHECK SOUND INPUT
#3
I604/I603
#7
#6
#5
CHECK 12VDC
CHECK SOUND OUTPUT
F
CHECK 9V
#11
#14
#44
#48
I501
LA7674
#1
#4
COMPOSITE SIGNAL
I601 #1
CHECK FM DET CIRCUIT
Z201
CHECK SOUNDIF INPUT

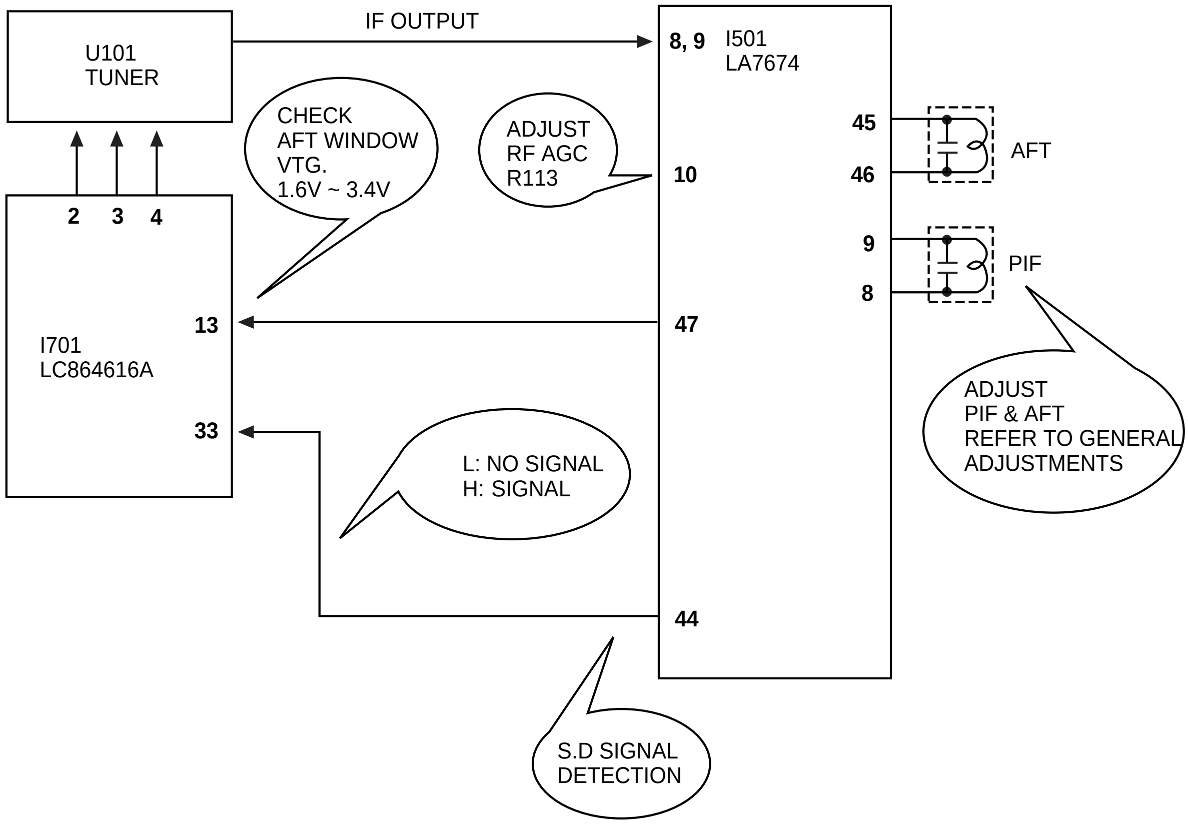

NO SOUND(CN-200A)
CHECK FOR SIGNAL AT I501 #1
GO TO Ⓔ
GO TO Ⓕ
Ⓔ
CHECK MONO 100% MOD -> 0.693 Vp-p
#38
#30 9V(B+)
#2(9VDC)
#22
#21
#20
CHECK 4.5V
IM601
L OUT
#15
CHECK R/L OUTPUT
R OUT
#13
CHECK 4.5V
#39
#40
(MUTE)#8
MUTE ON: 5V
OFF: 0V
#1 9V(B+)
#2 (0~5V)
I602
#8 (0~5V)
#4
#6
CHECK 1Vp-p
I604/I603
CHECK SOUND INPUT
#3
#7
#6
#5
CHECK 12VDC
CHECK SOUND OUTPUT
Ⓕ
CHECK 9V
#11
#14
#44
I501
LA7674
#48
Z201
#1
COMPOSITE SIGNAL
I601 #1
#4
CHECK FM DET CIRCUIT
CHECK SOUND IF INPUT

CH DON'T STOP

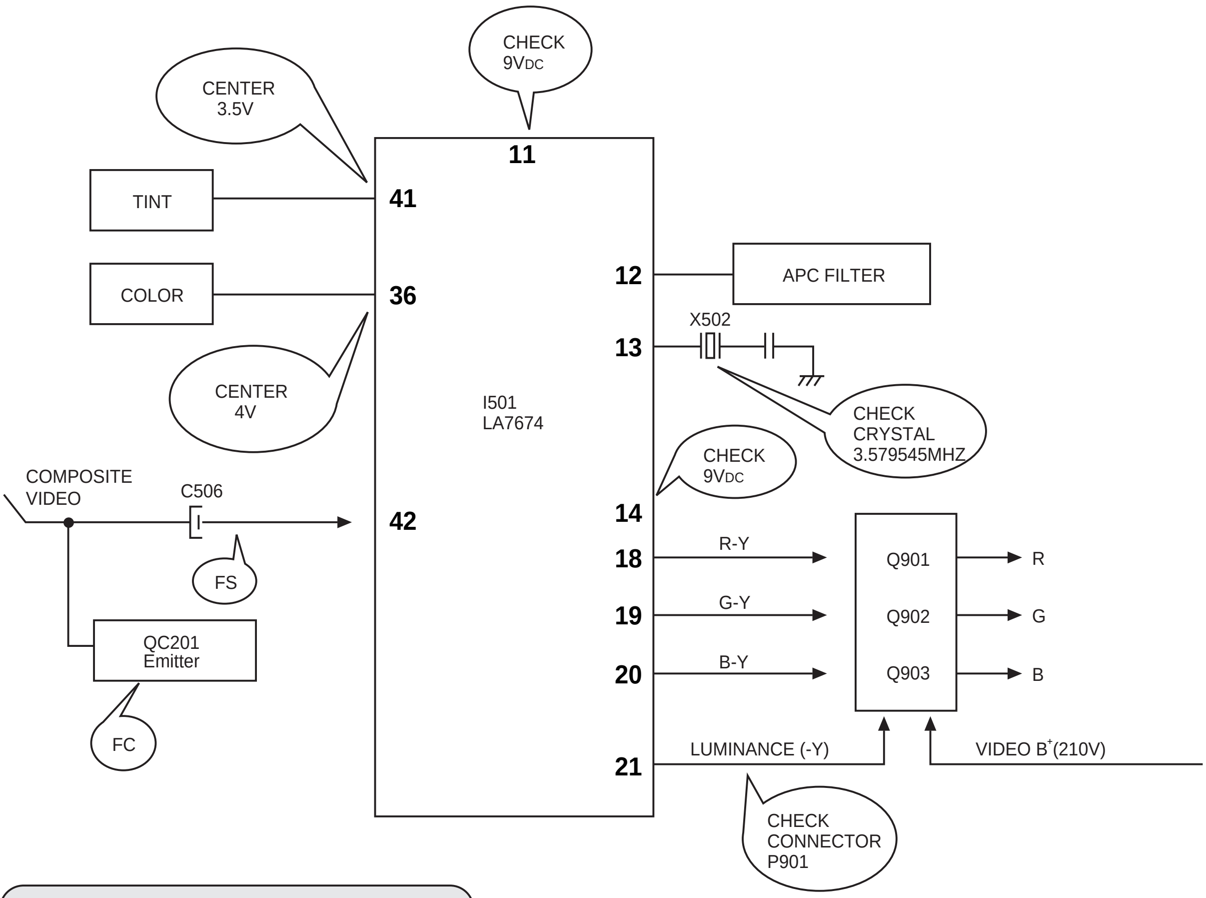
CHECK INPUT SIGNAL CONDITIONS

- GOOD → GO TO (G)
- BAD → LOSS OF SIGNAL OR WEAK SIGNAL

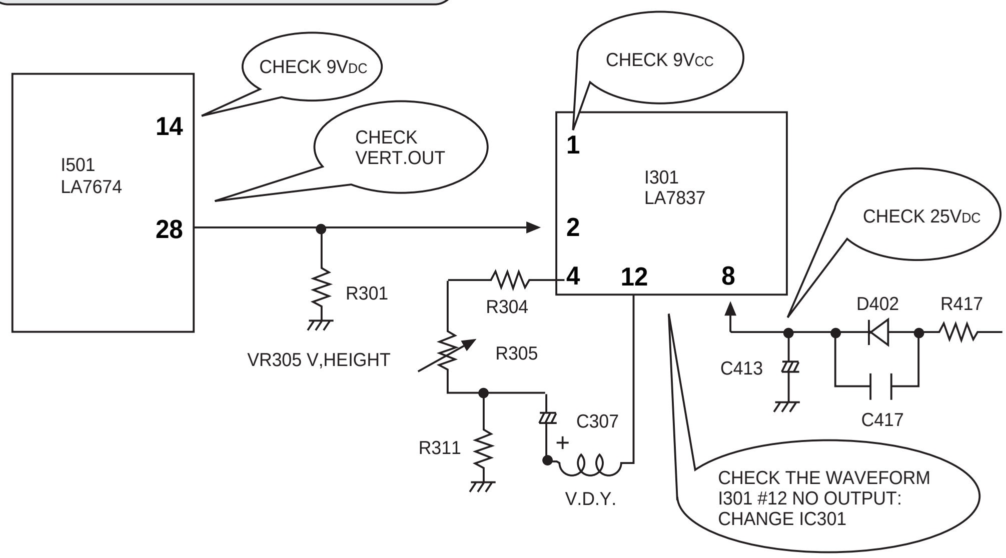
(G)



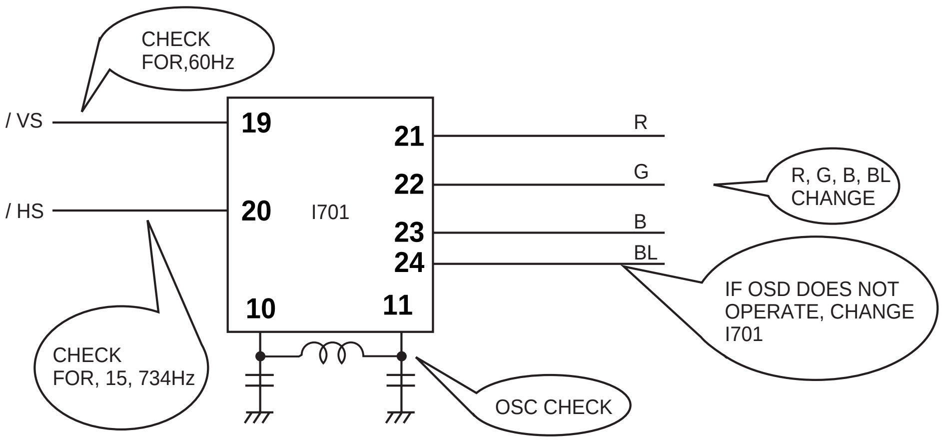
NO COLOR



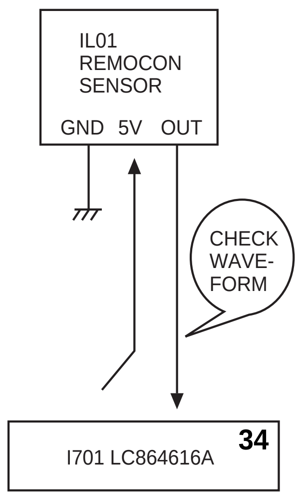
NO VERTICAL DEFLECTION



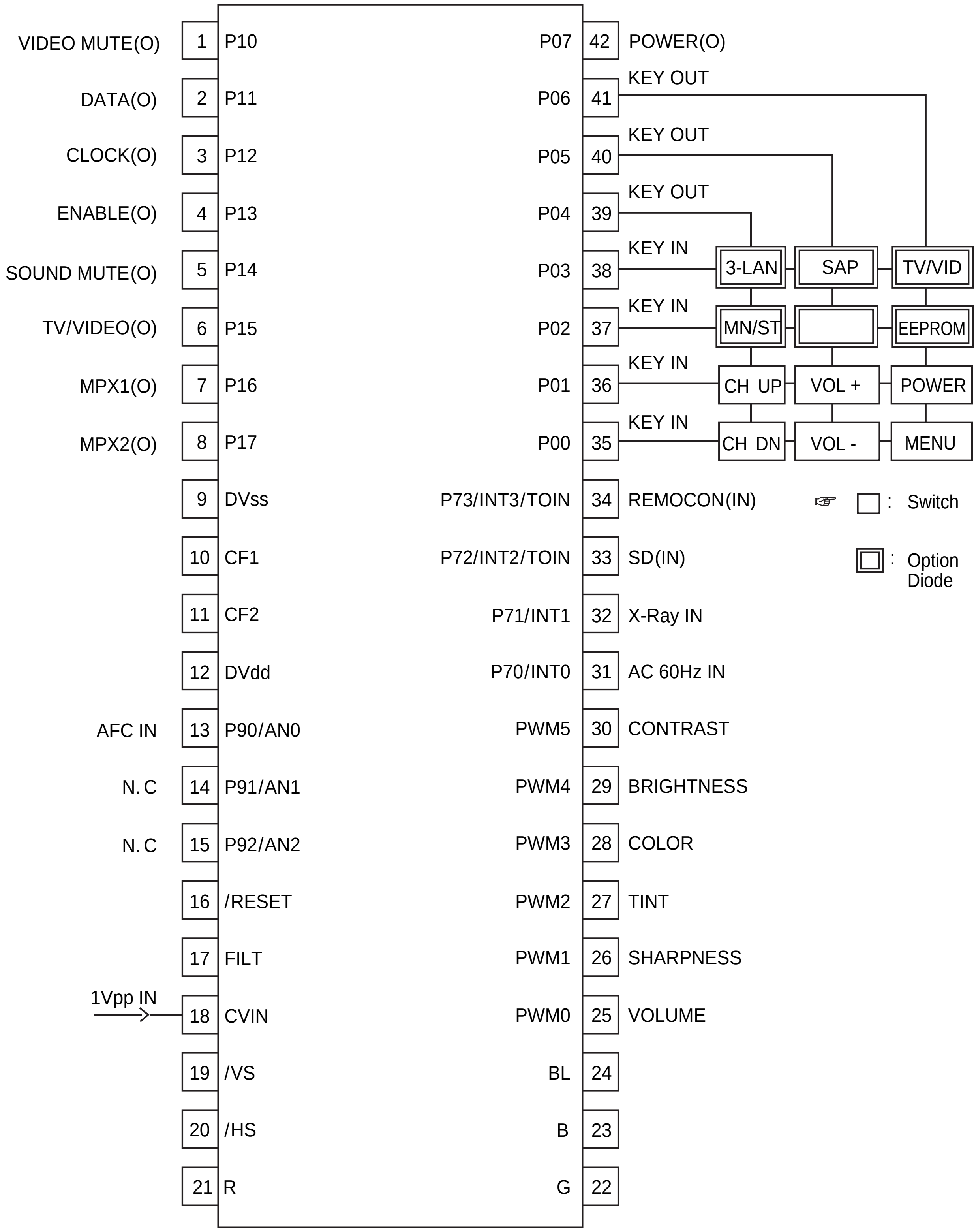
ON SCREEN DISPLAY DOES NOT OPERATE



REMOTE CONTROL DOES NOT OPERATE

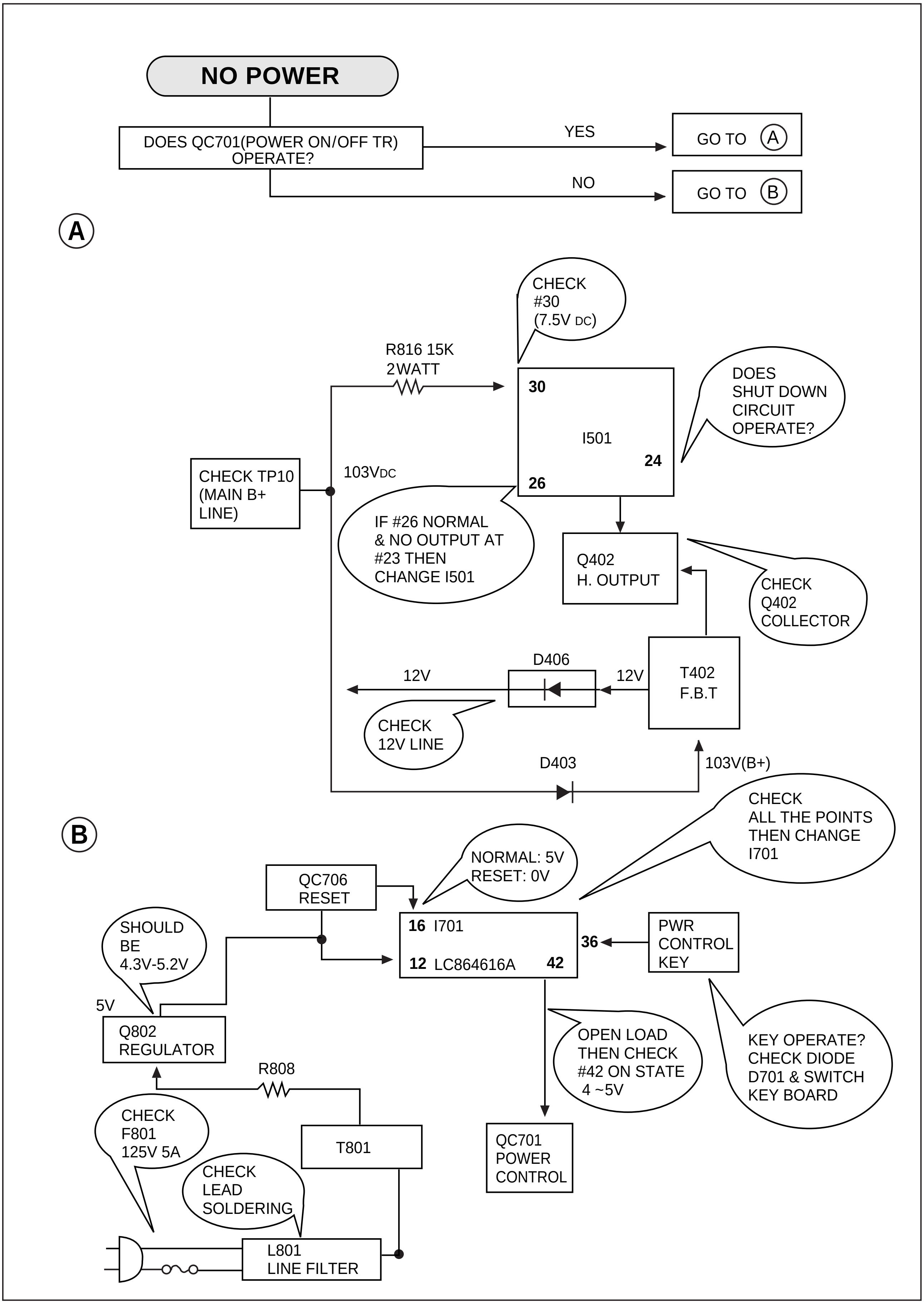


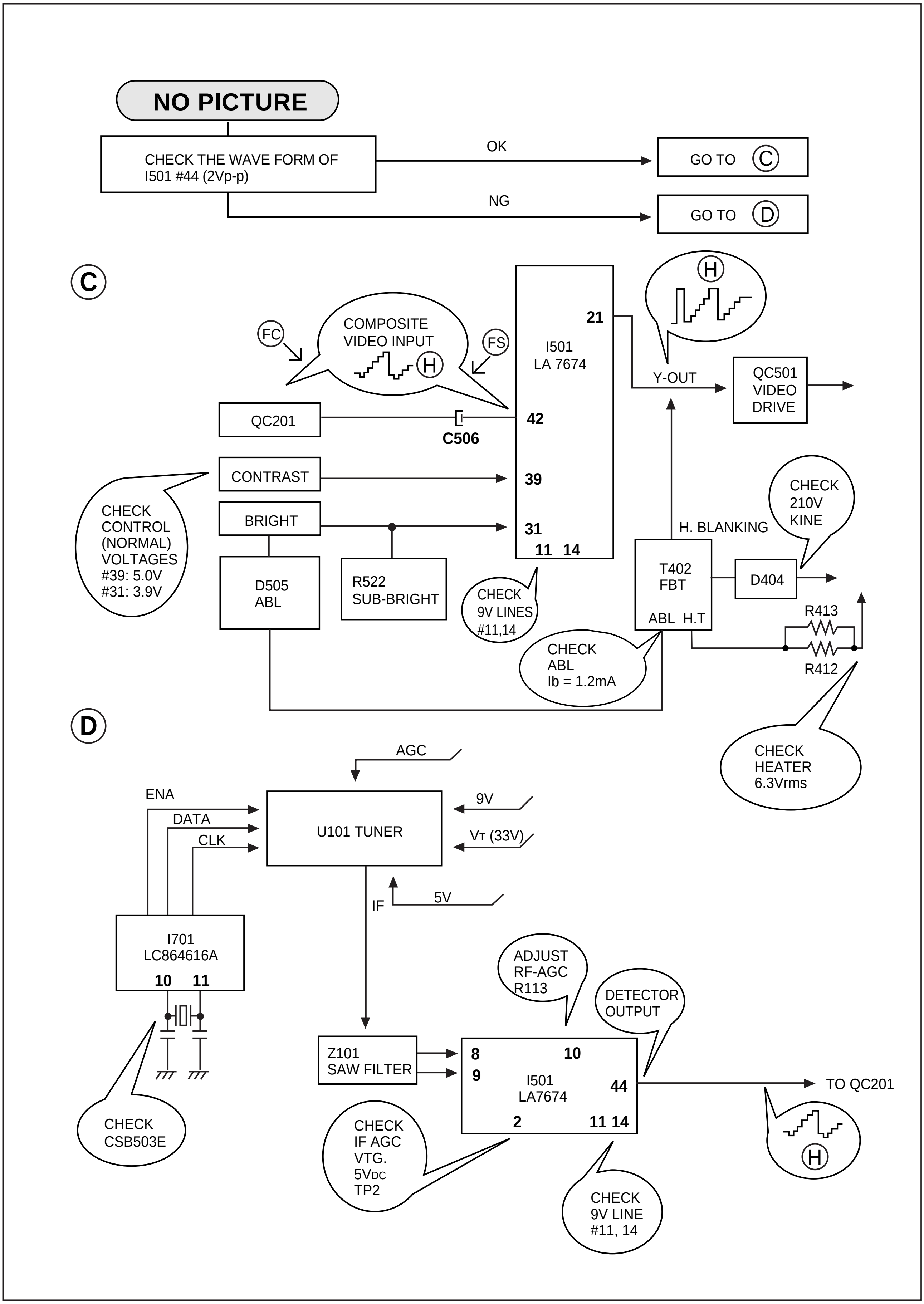
PIN ASSIGN OF IC LC864616A(I701)

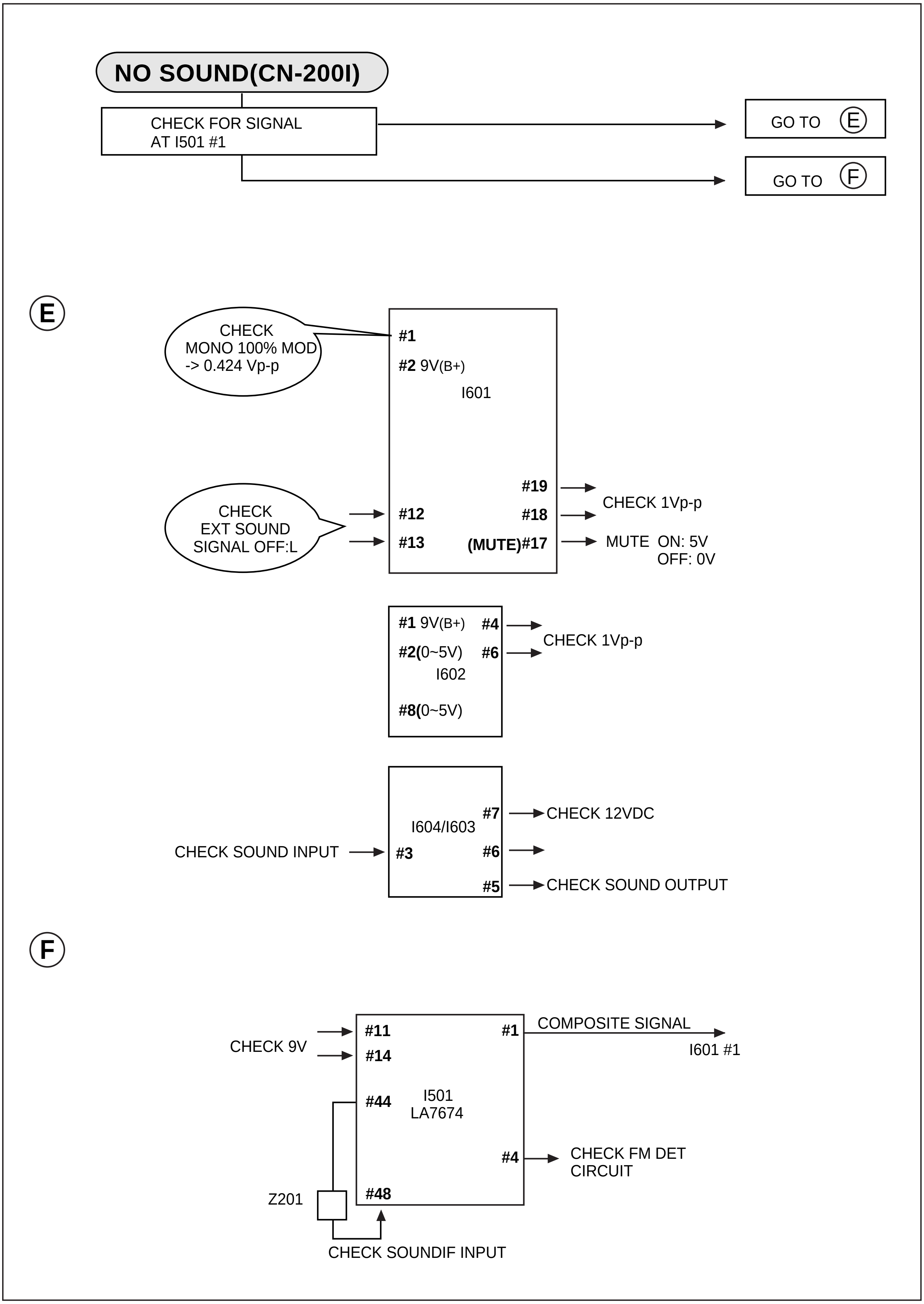


NOTE) CF is used 503KHz RESONATOR

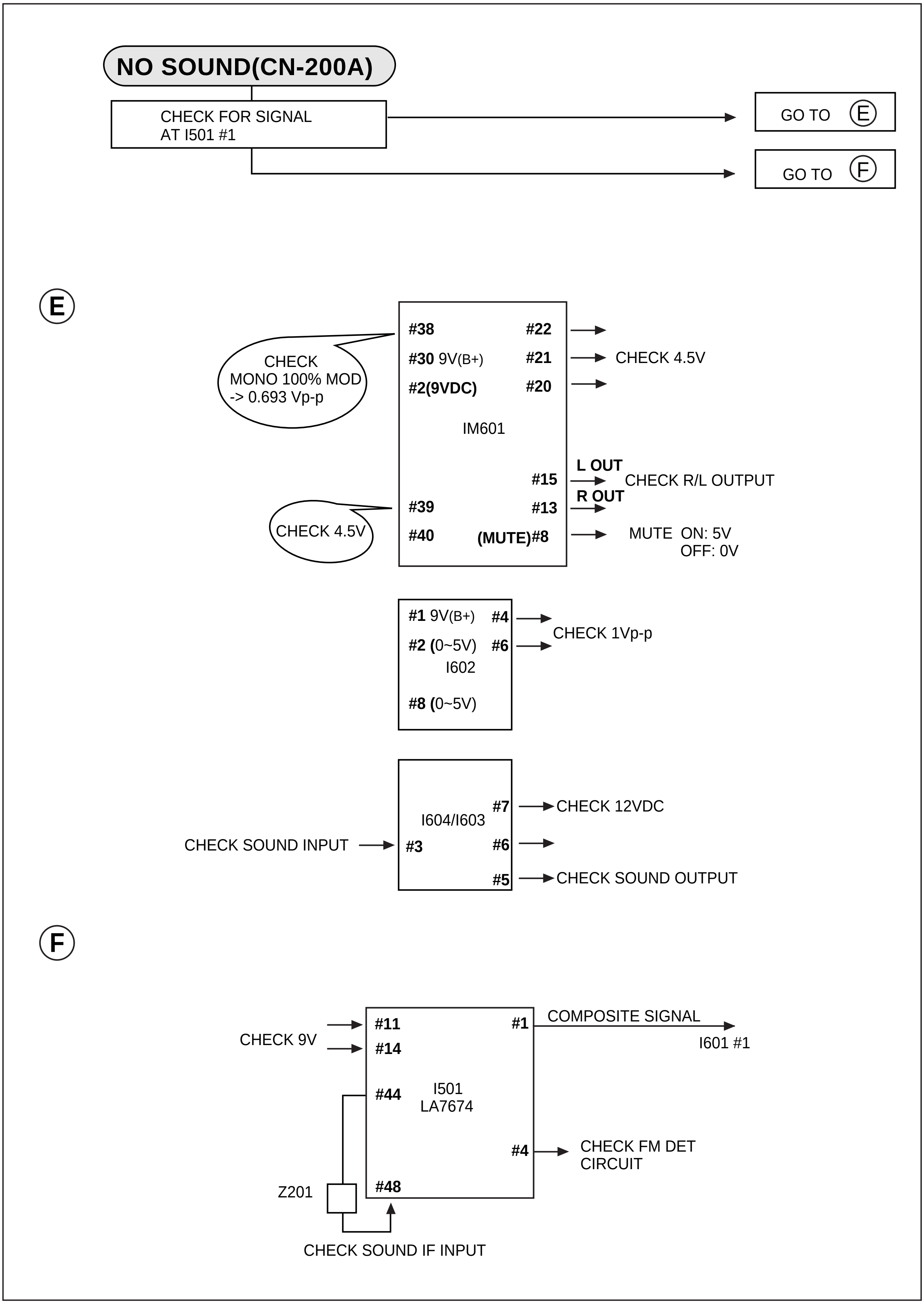
TROUBLE SHOOTING CHARTS




NO PICTURE
CHECK THE WAVE FORM OF I501 #44 (2Vp-p)
OK
GO TO C
NG
GO TO D
C
FC
COMPOSITE VIDEO INPUT
H
FS
I501 LA 7674
21
42
39
31
11 14
H
Y-OUT
QC501 VIDEO DRIVE
QC201
C506
CONTRAST
BRIGHT
CHECK CONTROL (NORMAL) VOLTAGES #39: 5.0V #31: 3.9V
D505 ABL
R522 SUB-BRIGHT
CHECK 9V LINES #11,14
H. BLANKING
T402 FBT
ABL H.T
D404
CHECK 210V KINE
R413
R412
CHECK ABL Ib = 1.2mA
CHECK HEATER 6.3Vrms
D
AGC
ENA
DATA
CLK
U101 TUNER
9V
VT (33V)
IF
5V
I701 LC864616A
10 11
CHECK CSB503E
ADJUST RF-AGC R113
DETECTOR OUTPUT
Z101 SAW FILTER
8
9
10
I501 LA7674
44
2
11 14
TO QC201
H
CHECK IF AGC VTG. 5VDC TP2
CHECK 9V LINE #11, 14



NO SOUND(CN-200I)
CHECK FOR SIGNAL AT I501 #1
GO TO E
GO TO F
E
CHECK MONO 100% MOD -> 0.424 Vp-p
#1
#2 9V(B+)
I601
CHECK EXT SOUND SIGNAL OFF:L
#12
#13
#19
#18
(MUTE)#17
CHECK 1Vp-p
MUTE ON: 5V OFF: 0V
#1 9V(B+)
#2(0~5V)
I602
#8(0~5V)
#4
#6
CHECK 1Vp-p
CHECK SOUND INPUT
#3
I604/I603
#7
#6
#5
CHECK 12VDC
CHECK SOUND OUTPUT
F
CHECK 9V
#11
#14
#44
#48
I501 LA7674
#1
#4
COMPOSITE SIGNAL
I601 #1
CHECK FM DET CIRCUIT
Z201
CHECK SOUNDIF INPUT

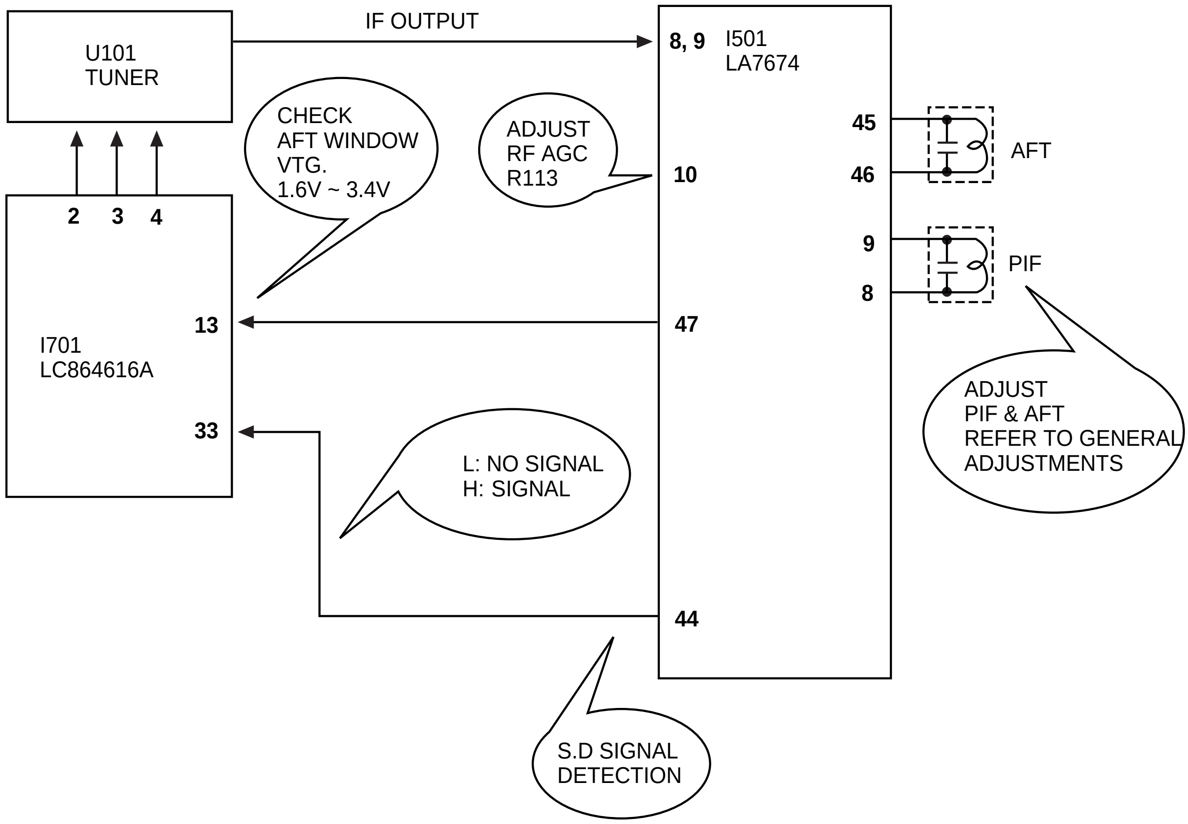

NO SOUND(CN-200A)
CHECK FOR SIGNAL AT I501 #1
GO TO E
GO TO F
E
CHECK MONO 100% MOD -> 0.693 Vp-p
#38
#30 9V(B+)
#2(9VDC)
#22
#21
#20
CHECK 4.5V
IM601
L OUT
#15
CHECK R/L OUTPUT
R OUT
#13
CHECK 4.5V
#39
#40
(MUTE)#8
MUTE ON: 5V
OFF: 0V
#1 9V(B+)
#2 (0~5V)
I602
#8 (0~5V)
#4
#6
CHECK 1Vp-p
I604/I603
CHECK SOUND INPUT
#3
#7
#6
#5
CHECK 12VDC
CHECK SOUND OUTPUT
F
CHECK 9V
#11
#14
#44
I501
LA7674
#48
Z201
#1
COMPOSITE SIGNAL
I601 #1
#4
CHECK FM DET CIRCUIT
CHECK SOUND IF INPUT

CH DON'T STOP

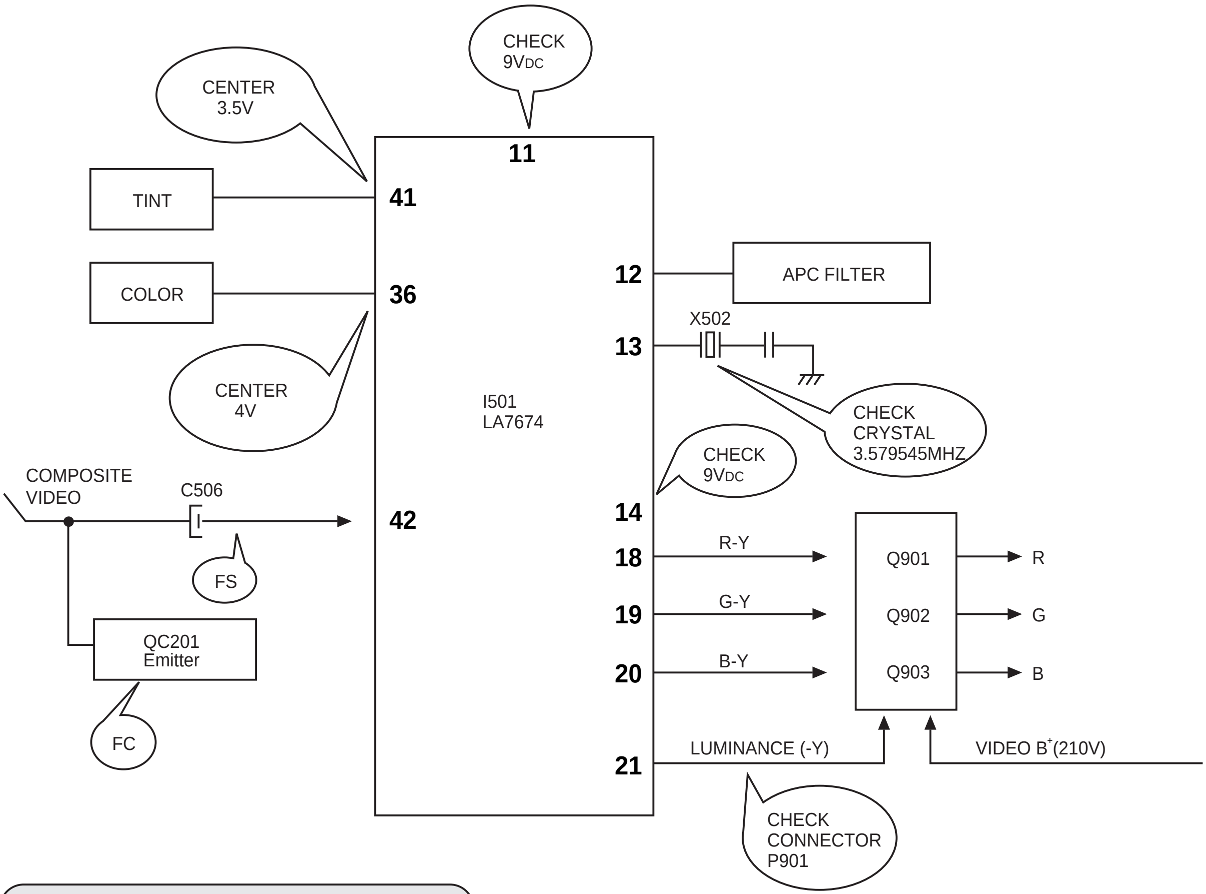
CHECK INPUT SIGNAL CONDITIONS

- GOOD → GO TO (G)
- BAD → LOSS OF SIGNAL OR WEAK SIGNAL

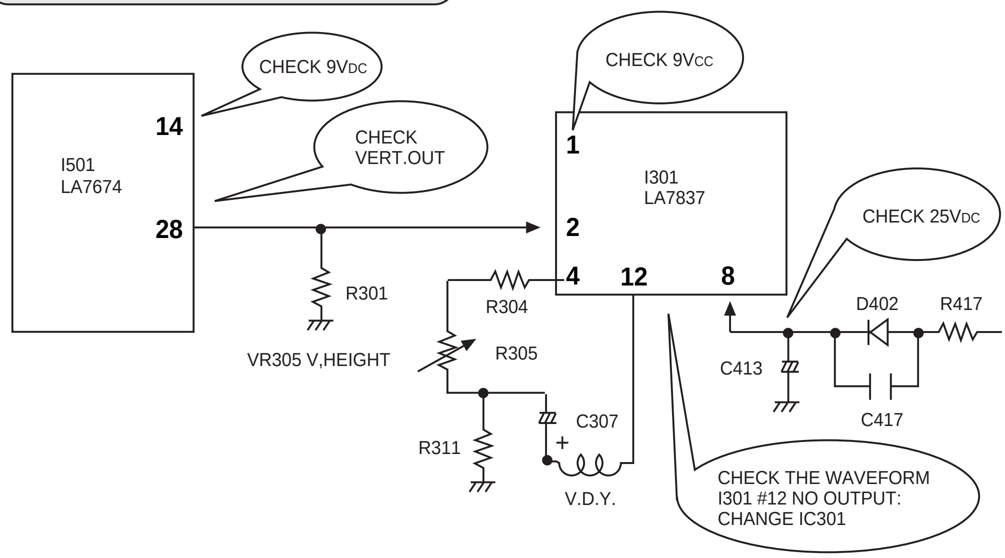
(G)



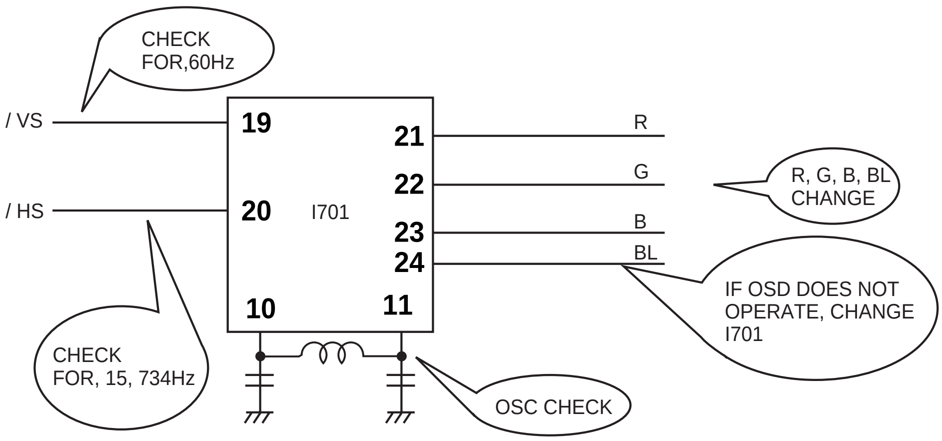
NO COLOR



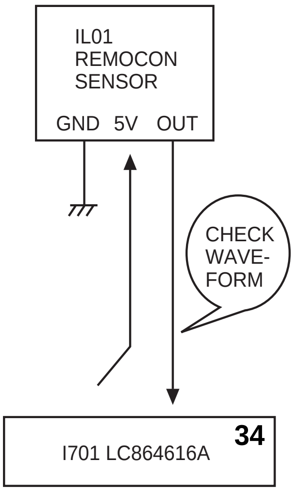
NO VERTICAL DEFLECTION



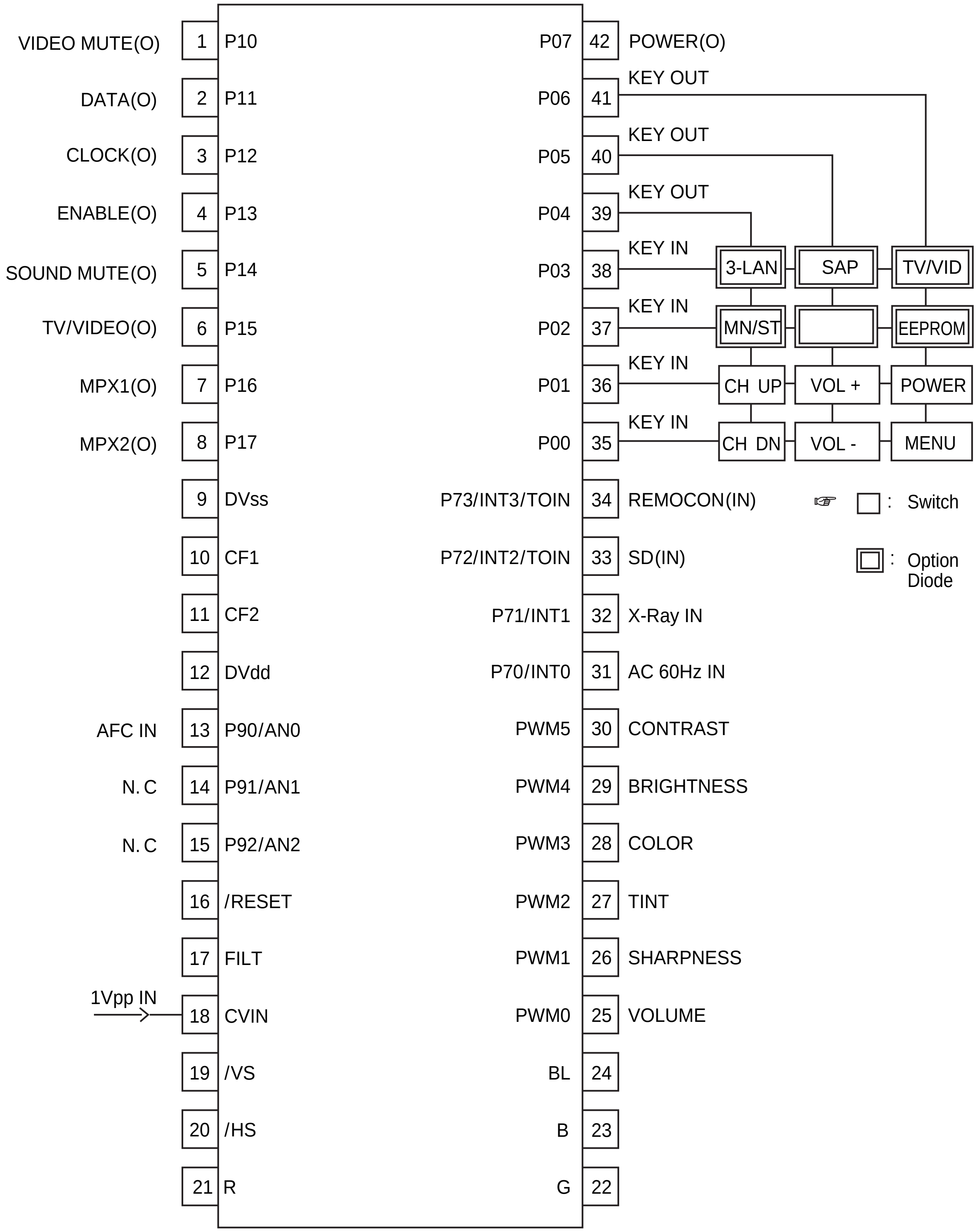
ON SCREEN DISPLAY DOES NOT OPERATE



REMOTE CONTROL DOES NOT OPERATE



PIN ASSIGN OF IC LC864616A(I701)

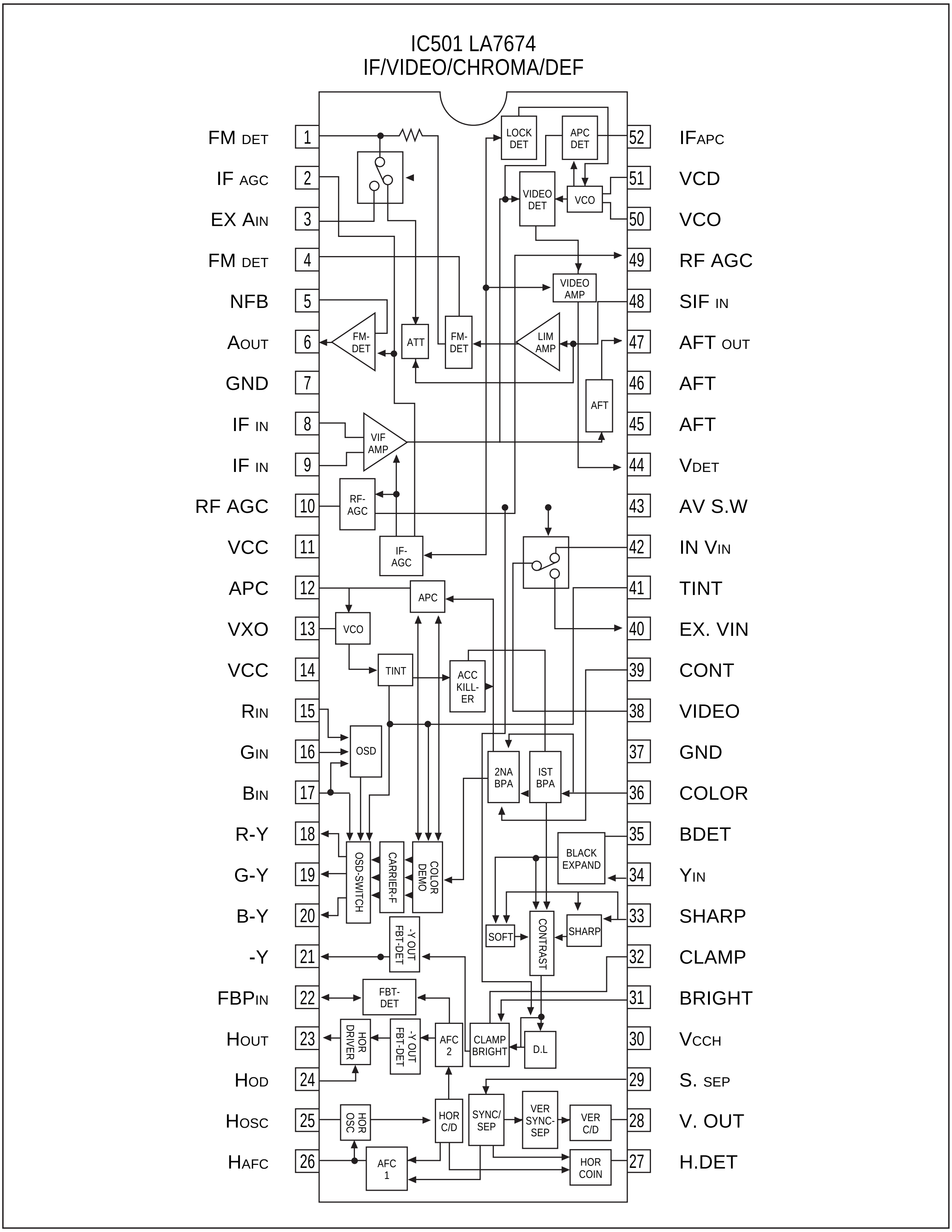


NOTE) CF is used 503KHz RESONATOR

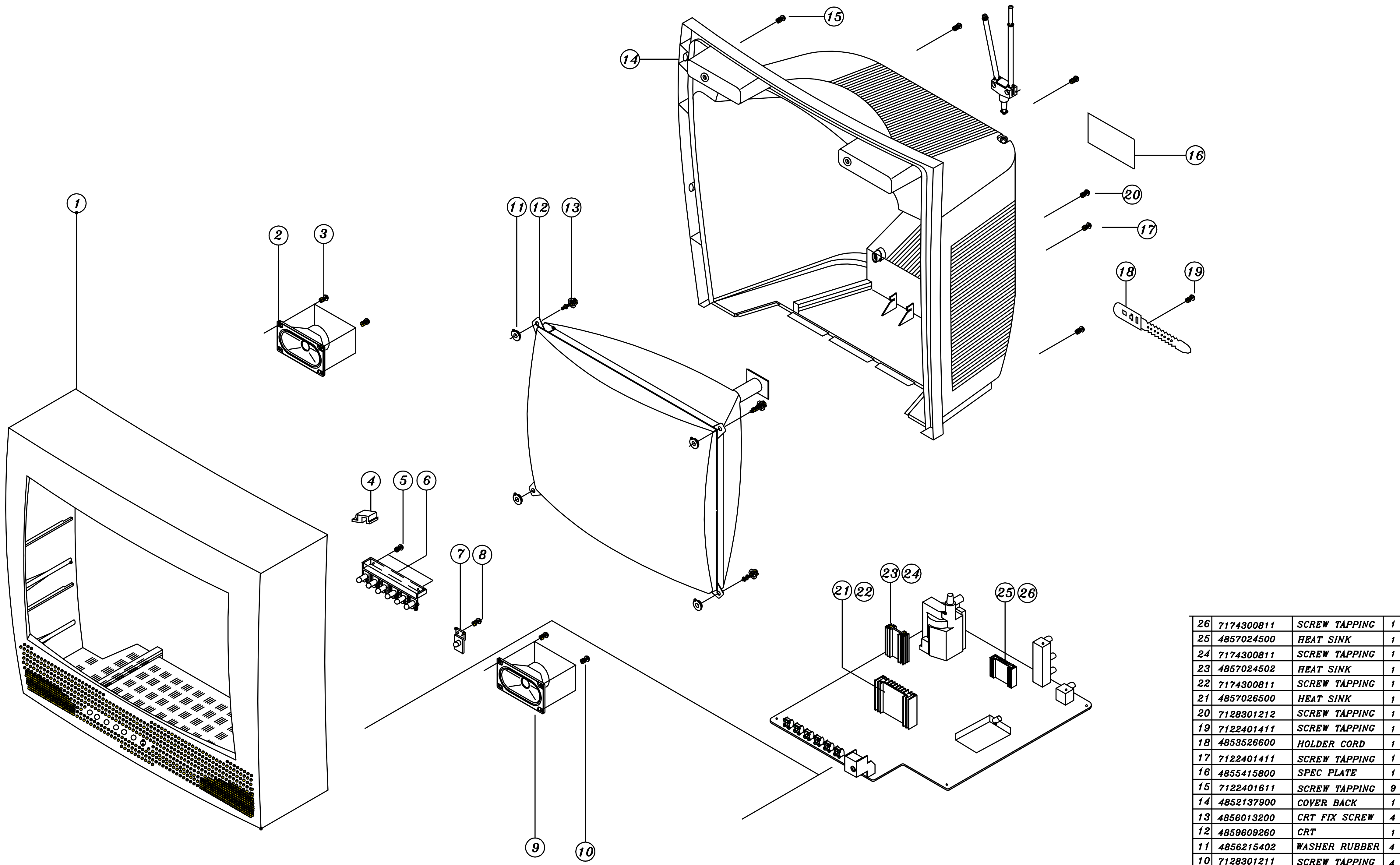
■ DESCRIPTION OF SEMICONDUCTORS

LA7674 (VIF/SIF/VIDEO/CHROMA/DEFLECTION)

1. Case Outline : SDIP 52P
2. Pin Connections/Block Diagram

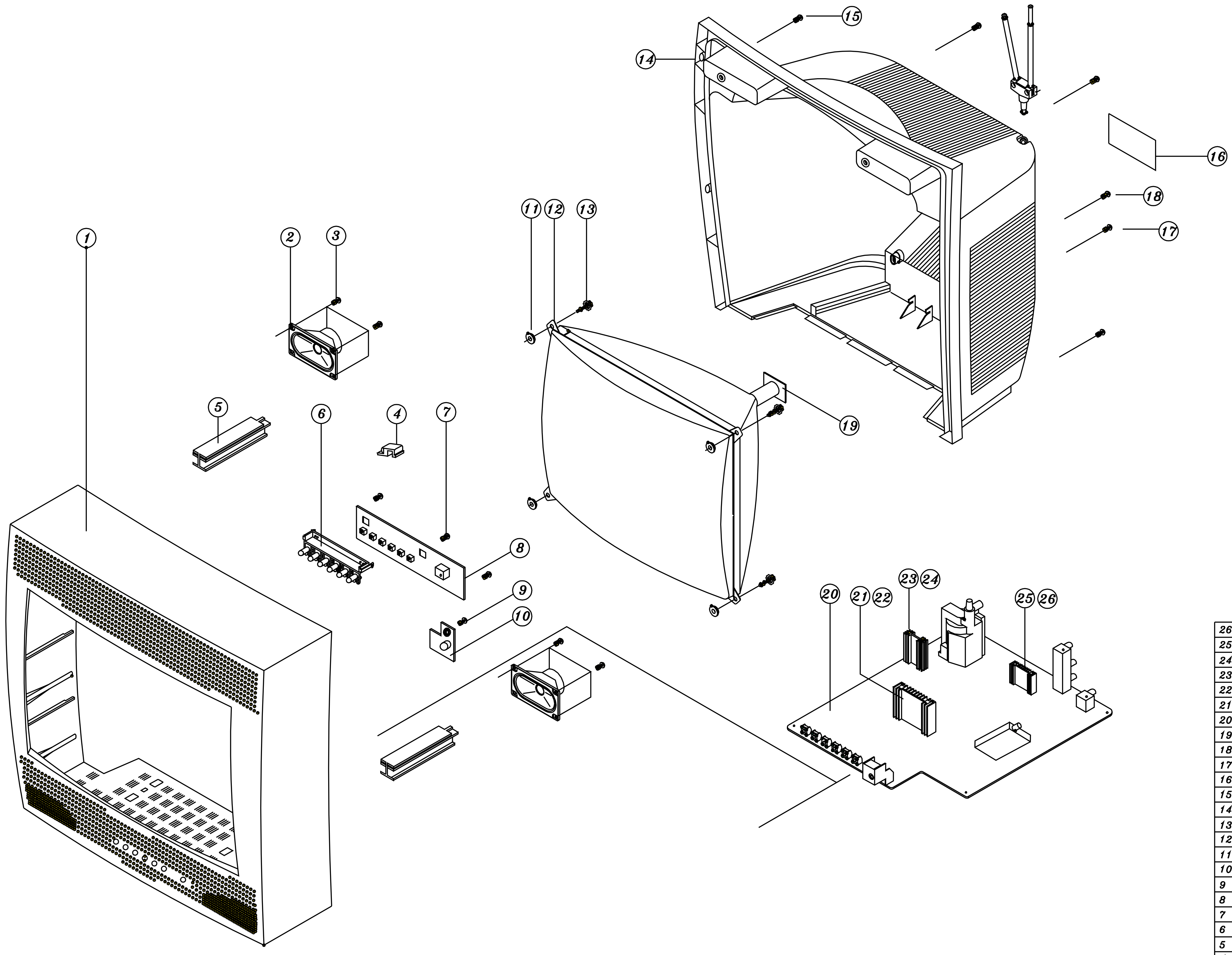


DTQ-26S1FC/FS/FSP/HC/HS/HSP
EXPLODED VIEW



26	7174300811	SCREW TAPPING	1	TT2 RND 3X8 MFZN	
25	4857024500	HEAT SINK	1	AL EX	
24	7174300811	SCREW TAPPING	1	TT2 RND 3X8 MFZN	
23	4857024502	HEAT SINK	1	AL EX	
22	7174300811	SCREW TAPPING	1	TT2 RND 3X8 MFZN	
21	4857026500	HEAT SINK	1	AL EX	
20	7128301212	SCREW TAPPING	1	T2S WAS 3*12 MFZN BK	
19	7122401411	SCREW TAPPING	1	T2S TRS 4*14 MFZN	C/B+HOL
18	4853526600	HOLDER CORD	1	NYLON66(DACB-183)	
17	7122401411	SCREW TAPPING	1	T2S TRS 4*14 MFZN	C/B+FBT
16	4855415800	SPEC PLATE	1	150ART P/E PILM(C/TV)	
15	7122401611	SCREW TAPPING	9	T2S TRS 4*16 MFZN	M/F+C/B
14	4852137900	COVER BACK	1	FR HIPS BK	
13	4856013200	CRT FIX SCREW	4	SWRM+SK-5 (L=25)	
12	4859609260	CRT	1	A63ADT10X05	
11	4856215402	WASHER RUBBER	4	CR	
10	7128301211	SCREW TAPPING	4	T2S WAS 3*12 MFZN	
9	4858309810	SPEAKER	1	AS3X2	
8	7128301011	SCREW TAPPING	1	T2S WAS 3*10 MFZN	
7	4855532600	DECO SENSOR	1	PMMA CL	
6	4854935001	BUTTON	1	HG ABS BK	
5	7128301011	SCREW TAPPING	2	T2S WAS 3*10 MFZN	
4	4853525500	HOLDER CORD	1	FR HIPS BK	
3	7128301211	SCREW TAPPING	4	T2S WAS 3*12 MFZN	
2	4858309810	SPEAKER	1	AS3X2	
1	4852050700	MASK FRONT	1	FR HIPS BK	

■ DTQ-29S1FCN/FSN/FSP/HC/HS/HSP EXPLODED VIEW



26	7174300811	SCREW TAPPING	1	TT2 RND 3X8 MFZN	
25	4857024500	HEAT SINK	1	AL EX	
24	7174300811	SCREW TAPPING	1	TT2 RND 3X8 MFZN	
23	4857024502	HEAT SINK	1	AL EX	
22	7174300811	SCREW TAPPING	1	TT2 RND 3X8 MFZN	
21	4857026500	HEAT SINK	1	AL EX	
20		MAIN PCB			
19		CRT PCB			
18	7128301212	SCREW TAPPING	1	T2S WAS 3*12 MFZN BK	
17	7122401411	SCREW TAPPING	1	T2S TRS 4*14 MFZN	C/B+FBT
16	4855415800	SPEC PLATE	1	150ART P/E PILM(C/TV)	
15	7122401611	SCREW TAPPING	10	T2S TRS 4*16 MFZN	M/F+C/B
14	4852137800	COVER BACK	1	FR HIPS BK	
13	4856013200	CRT FIX SCREW	4	SWRM+SK-5 (L=25)	
12		CRT	1		
11	4856215402	WASHER RUBBER	4	CR	
10	4855521900	DECO SENSOR	1	PMMA CL	
9	7128301011	SCREW TAPPING	1	T2S WAS 3*10 MFZN	
8		CONTROL PCB			
7	7128301211	SCREW TAPPING	3	T2S WAS 3*12 MFZN	
6	4854923301	BUTTON	1	HG ABS BK	
5	4853939000	BRKT PCB	2	FR HIPS BK	
4	4853525500	HOLDER CORD	1	FR HIPS BK	
3	7128301211	SCREW TAPPING	8	T2S WAS 3*12 MFZN	
2	4858309810	SPEAKER	2	AS3X2	
1	4852050400	MASK FRONT	1	FR HIPS BK	

SCHEMATIC DIAGRAM

CN-200A

DTQ-26S1HC
DTQ-29S1HC
DTQ-26S1HS
DTQ-29S1HS
(220V) DTQ-26S1HSP
(220V) DTQ-29S1HSP

1. CAUTION

⚠ SYMBOL MARKED PARTS IN THE SCHEMATIC DIAGRAM DESIGNATE THE COMPONENTS WHICH HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY AND SHOULD BE REPLACED ONLY WITH TYPES INDENTICAL TO THOSE IN ORIGINAL CIRCUIT OR SPECIFIED IN THE PARTS LIST.
DO NOT DEGRADE THE SAFETY OF THE RECEIVER THROUGH IMPROPER SERVICING.

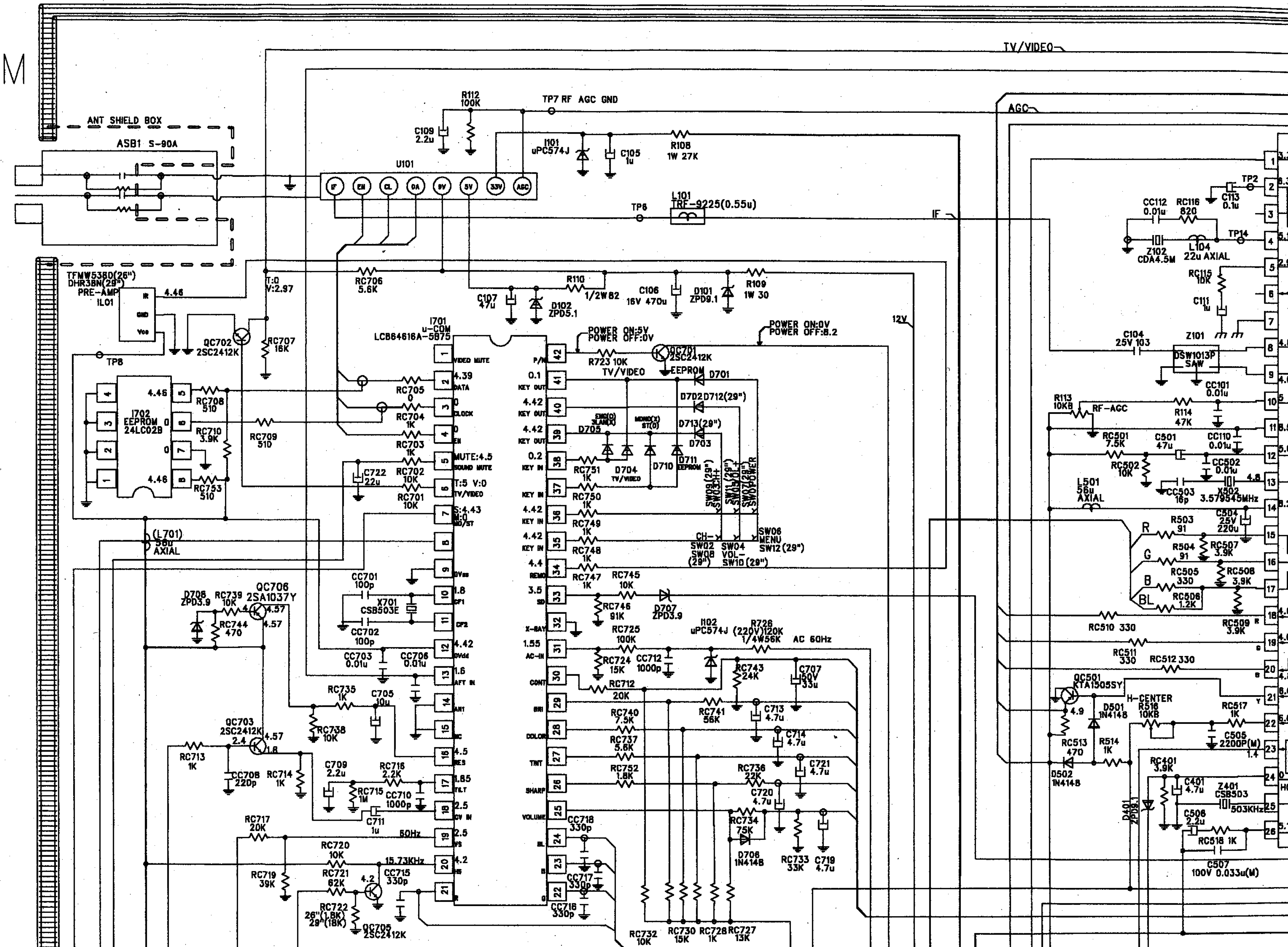
WARING :

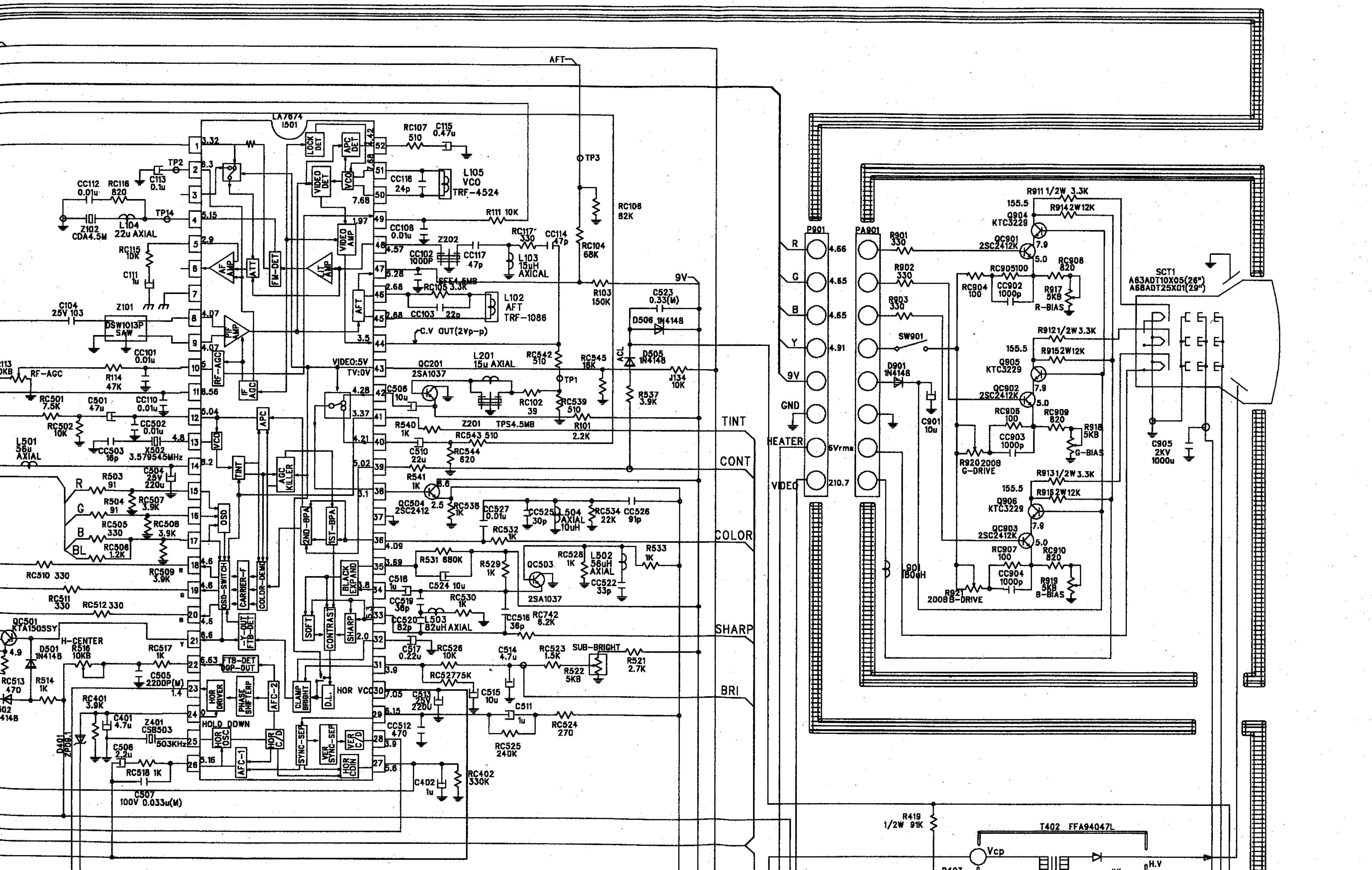
BEFORE SERVICING THIS CHASSIS,READ THE "X-RAY RADIATION PRECAUTION " "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" IN THE SERVICE MANUAL.

CAUTION TO THE SERVICE TECHNICIANS :

BEFORE RETURNING THE RECEIVER TO THE CUSTOMER APROPRIATE LEAKAGE CURRENT OR RESISTANCE MEASUREMENT SHOULD BE CONDUCTED TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

NOTE :





LA7674
I501
AFT
TP3
TP2
TP14
RC107 510
C115 0.47u
L105 VCO TRF-4524
CC116 24p
CC112 0.01u
RC116 820
C113 0.1u
Z102 CDA4.5M
L104 22u AXIAL
RC115 10K
C111 1u
C104 25V 103
Z101
DSW1013P SAW
CC101 0.01u
RF-AGC
R114 47K
CC110 0.01u
RC501 7.5K
C501 47u
RC502 10K
CC502 0.01u
L501 56u AXIAL
CC503 16p
X502 3.579545MHz
R503 91
C504 25V 220u
R504 91
RC507 3.9K
RC505 330
RC508 3.9K
RC506 1.2K
RC509 3.9K
RC510 330
RC511 330
RC512 330
QC501 KTA1505SY
H-CENTER
R516 10KB
D501 1N4148
RC517 1K
C505 2200P(M)
RC513 470
R514 1K
RC401 3.9K
C401 4.7u
Z401 CSB503
503KHz
C506 2.2u
RC518 1K
C507 100V 0.033u(M)
D401 ZPD9.1
R111 10K
CC108 0.01u
CC102 1000P
Z202
CC117 47p
RC117 330
CC114 47p
L103 15uH AXICAL
RC104 68K
RC106 82K
SFE4.5MB
RC105 3.3K
L102 AFT TRF-1086
CC103 22p
C.V OUT(2Vp-p)
R103 150K
9V
C523 0.33(M)
D506 1N4148
D505 1N4148
ACL
VIDEO:5V
TV:0V
QC201 2SA1037
L201 15u AXIAL
RC542 510
RC545 18K
TP1
J134 10K
R537 3.9K
C506 10u
RC102 39
RC539 510
R540 1K
Z201 TPS4.5MB
R101 2.2K
RC543 510
C510 22u
RC544 620
R541 1K
QC504 2SC2412
RC538 1K
CC527 0.01u
CC525 30p
L504 AXIAL 10uH
RC534 22K
CC526 91p
RC532 1K
R531 680K
R529 1K
QC503 2SA1037
RC528 1K
L502 56uH AXIAL
CC522 33p
R533 1K
C518 1u
C524 10u
CC519 36p
RC530 1K
CC520 82p
L503 82uH AXIAL
CC516 36p
RC742 6.2K
C517 0.22u
RC526 10K
C514 4.7u
RC523 1.5K
SUB-BRIGHT
R521 2.7K
R522 5KB
RC527 75K
C513 25V 220U
C515 10u
C511 1u
RC524 270
CC512 470
RC525 240K
C402 1u
RC402 330K
TINT
CONT
COLOR
SHARP
BRI
P901
PA901
R G B Y 9V GND HEATER VIDEO
4.66 4.65 4.65 4.91 5Vrms 210.7
R901 330
R902 330
R903 330
SW901
D901 1N4148
C901 10u
L901 180uH
R911 1/2W 3.3K
R914 2W 12K
155.5
Q904 KTC3229
QC901 2SC2412K
RC905 100
RC904 100
CC902 1000p
RC908 820
R917 5KB R-BIAS
R912 1/2W 3.3K
R915 2W 12K
Q905 KTC3229
QC902 2SC2412K
RC906 100
CC903 1000p
RC909 820
R918 5KB G-BIAS
R920 200B G-DRIVE
R913 1/2W 3.3K
R916 2W 12K
Q906 KTC3229
QC903 2SC2412K
RC907 100
CC904 1000p
RC910 820
R919 5KB B-BIAS
R921 200B B-DRIVE
SCT1 A63ADT10X05(26") A68ADT25X01(29")
C905 2KV 1000u
R419 1/2W 91K
T402 FFA94047L
Vcp
H.V

NOTE :

1. RESISTANCE IS SHOWN IN OHMS. K=1,000 M=1,000,000

2. UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITOR VALUES LESS THAN I ARE EXPRESSED IN uF AND THE VALUES MORE THAN I IN pF.

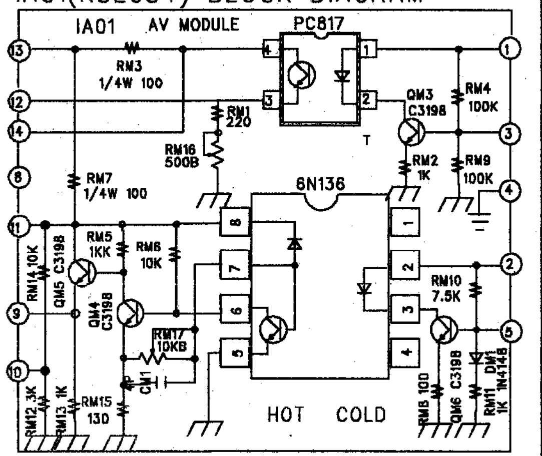
3. VOLTAGES READ WITH "V.T.V.M" FROM POINT INDICATE TO CHASSIS GROUND USING A COLOR BAR SIGNAL WITH ALL CONTROLS AT NORMAL LINE VOLTAGE 120 VOLTS AC.

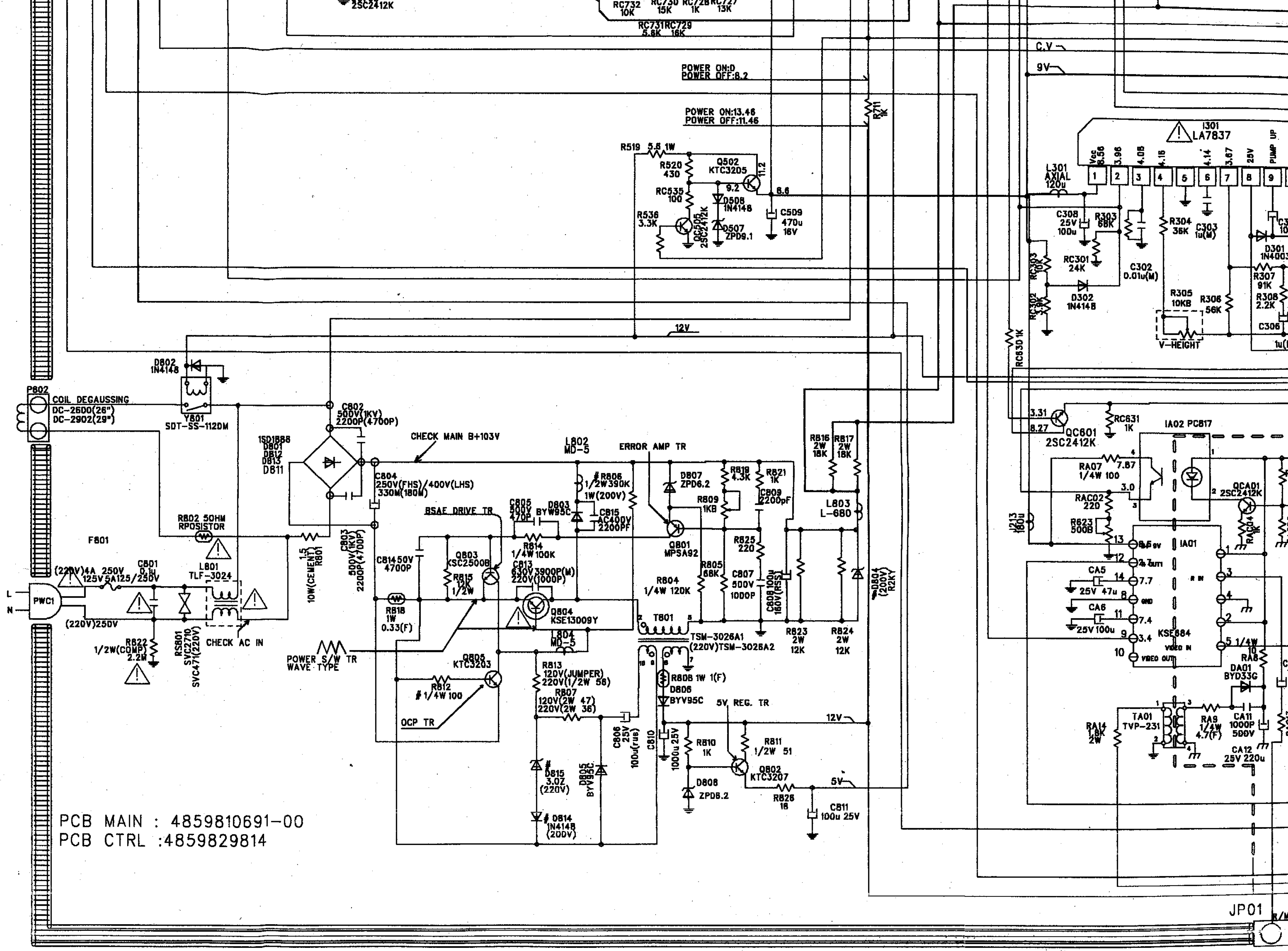
   VOLTAGE READINGS SHOWN ARE NORMAL VALUES AND MAY VARY +20% EXCEPT H.V.

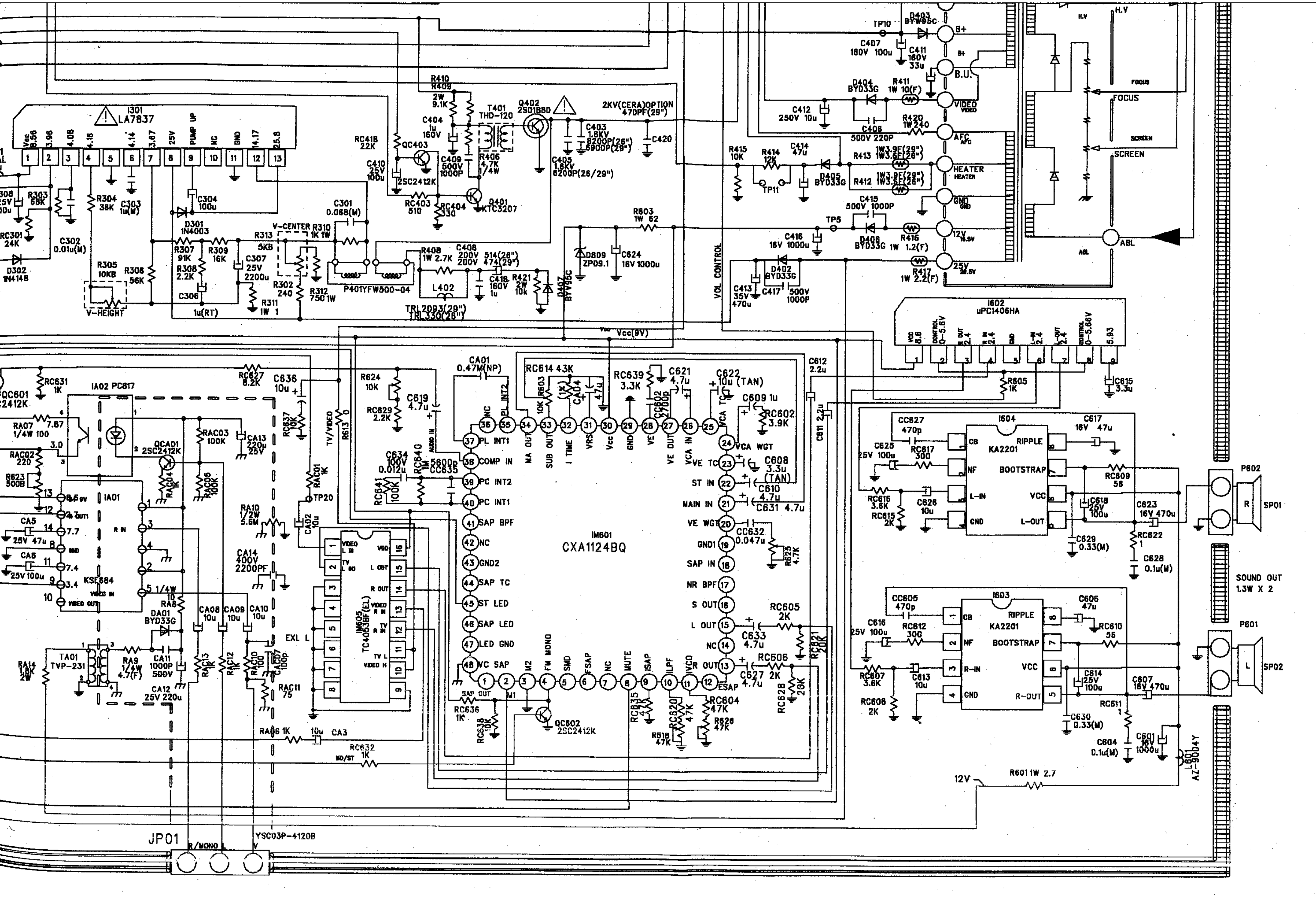
4. IN CASE OF 19" RECEIVER THE COMPONENT WITH THE MARK * SHOULD BE USED ONLY.

5. THE CIRCUIT DIAGRAM IS A STANDARD ONE. CIRCUITS PRINTED MAY BE SUBJECT TO CHANGE FOR PRODUCT IMPROVEMENT WITHOUT PRIOR NOTICE.

IA01(KSE684) BLOCK DIAGRAM







I301 LA7837
T401 THD-120
Q402 2SD1880
2KV(CERA)OPTION 470PF(29")
QC403 2SC2412K
Q401 KTC3207
V-CENTER
V-HEIGHT
P401YFW500-04
TRL2093(29")
TRL330(26")
Vcc(9V)
VOL CONTROL
I602 uPC1406HA
IA02 PC817
QCA01 2SC2412K
IA01
KSE684
IM605 TC4053BF(EL)
IM601 CXA1124BQ
QC602 2SC2412K
I604 KA2201
I603 KA2201
RIPPLE
BOOTSTRAP
P602
P601
SP01
SP02
SOUND OUT 1.3W X 2
TA01 TVP-231
EXL L
JP01
YSC03P-4120B
R/MONO
FOCUS
SCREEN
ABL
B+
B.U.
VIDEO
AFC
HEATER
GND
12V
25V
L601 AZ-9004Y
12V

SCHEMATIC DIAGRAM

CN-200I

DTQ-29S1FCN
DTQ-26S1FC
DTQ-26S1FS
DTQ-29S1FSN
(220V) DTQ-29S1FSP
(220V) DTQ-26S1FSP

1. CAUTION

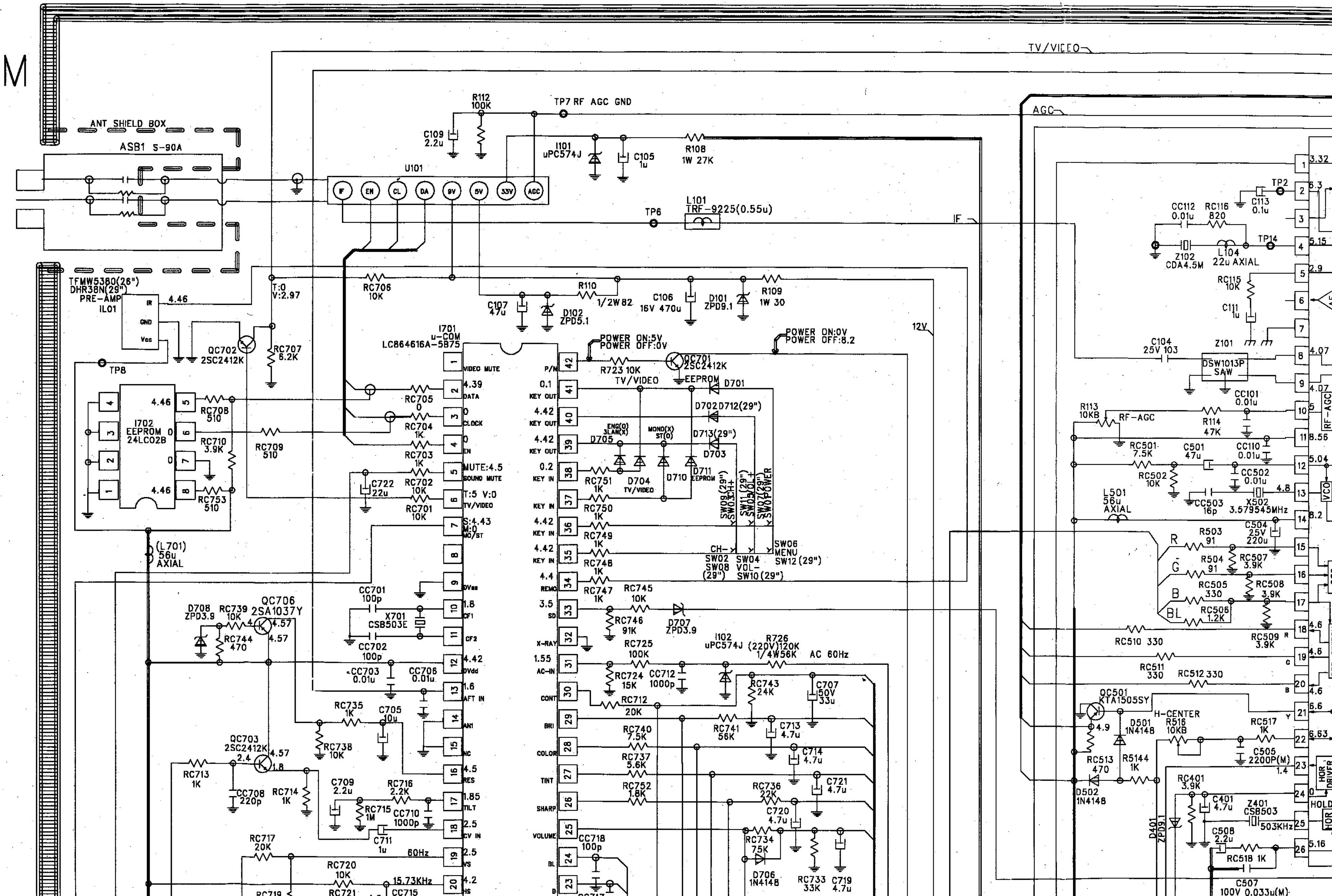
⚠ SYMBOL MARKED PARTS IN THE SCHEMATIC DIAGRAM DESIGNATE THE COMPONENTS WHICH HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY AND SHOULD BE REPLACED ONLY WITH TYPES INDENTICAL TO THOSE IN ORIGINAL CIRCUIT OR SPECIFIED IN THE PARTS LIST.
DO NOT DEGRADE THE SAFETY OF THE RECEIVER THROUGH IMPROPER SERVICING.

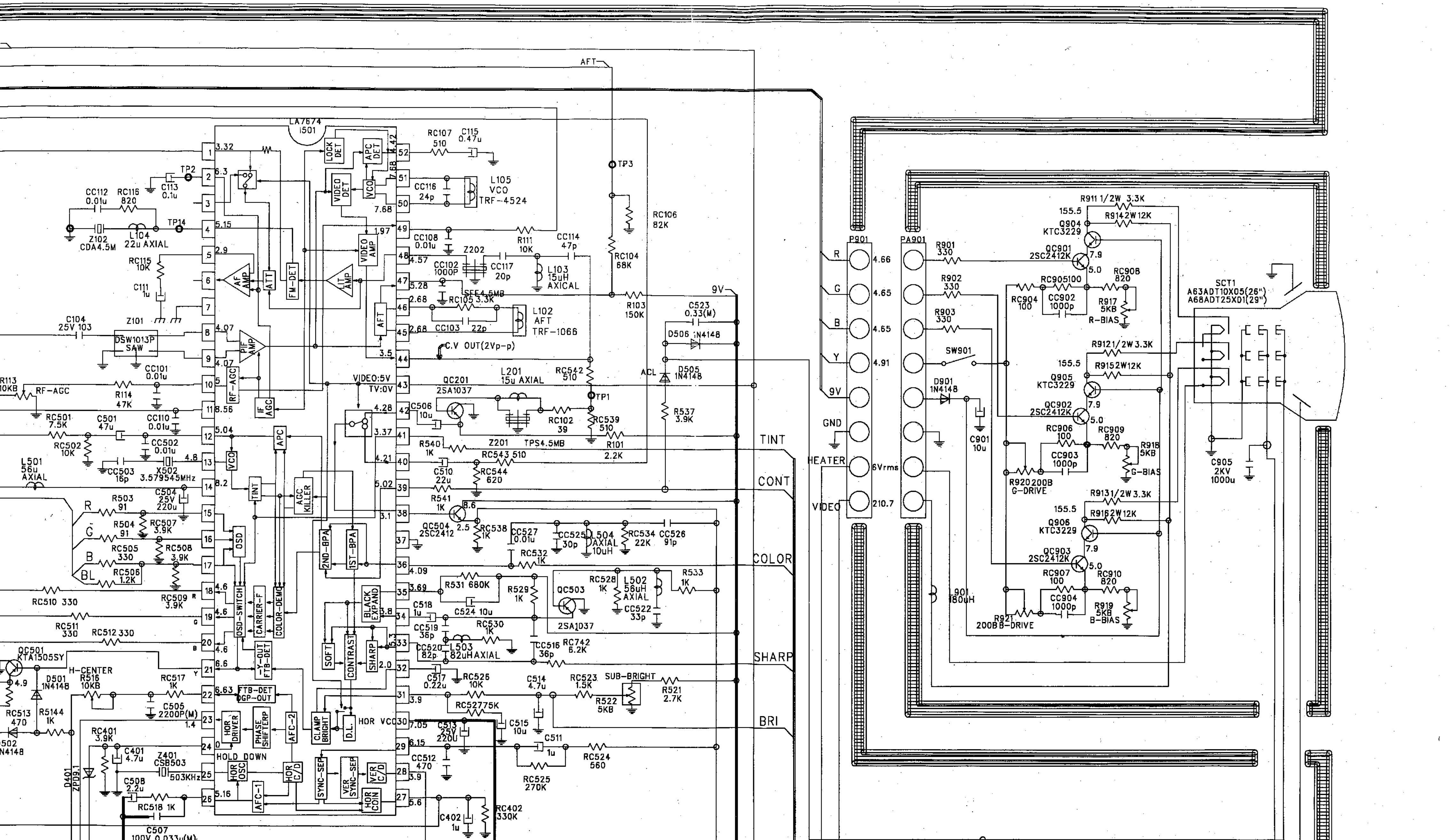
WARING :

BEFORE SERVICING THIS CHASSIS,READ THE "X-RAY RADIATION PRECAUTION" "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" IN THE SERVICE MANUAL.

CAUTION TO THE SERVICE TECHNICIANS :

BEFORE RETURNING THE RECEIVER TO THE CUSTOMER APROPRIATE LEAKAGE CURRENT OR RESISTANCE MEASUREMENT SHOULD BE CONDUCTED TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.





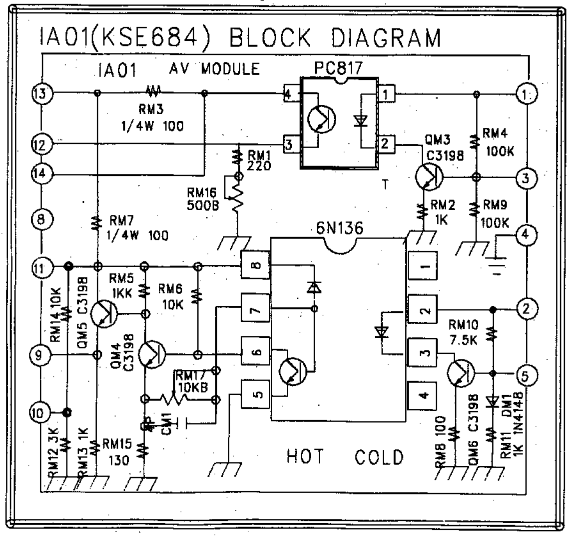
LA7674
I501
AFT
TP3
TP1
TP2
TP14
RC106 82K
RC104 68K
R103 150K
C523 0.33(M)
D506 1N4148
D505 1N4148
ACL
R537 3.9K
9V
TINT
CONT
COLOR
SHARP
BRI
SUB-BRIGHT
H-CENTER
VIDEO:5V
TV:0V
C.V OUT(2Vp-p)
L105 VCO TRF-4524
L102 AFT TRF-1066
Z101 DSW1013P SAW
Z102 CDA4.5M
X502 3.579545MHz
Z401 CSB503 503KHz
QC201 2SA1037
QC504 2SC2412
QC503 2SA1037
QC501 KTA1505SY
D401 ZPD9.1
P901
PA901
R
G
B
Y
GND
HEATER
VIDEO
4.66
4.65
4.91
6Vrms
210.7
SW901
D901 1N4148
C901 10u
L901 180uH
Q904 KTC3229
QC901 2SC2412K
Q905 KTC3229
QC902 2SC2412K
Q906 KTC3229
QC903 2SC2412K
R-BIAS
G-BIAS
B-BIAS
G-DRIVE
B-DRIVE
SCT1
A63ADT10X05(26")
A68ADT25XD1(29")
C905 2KV 1000u

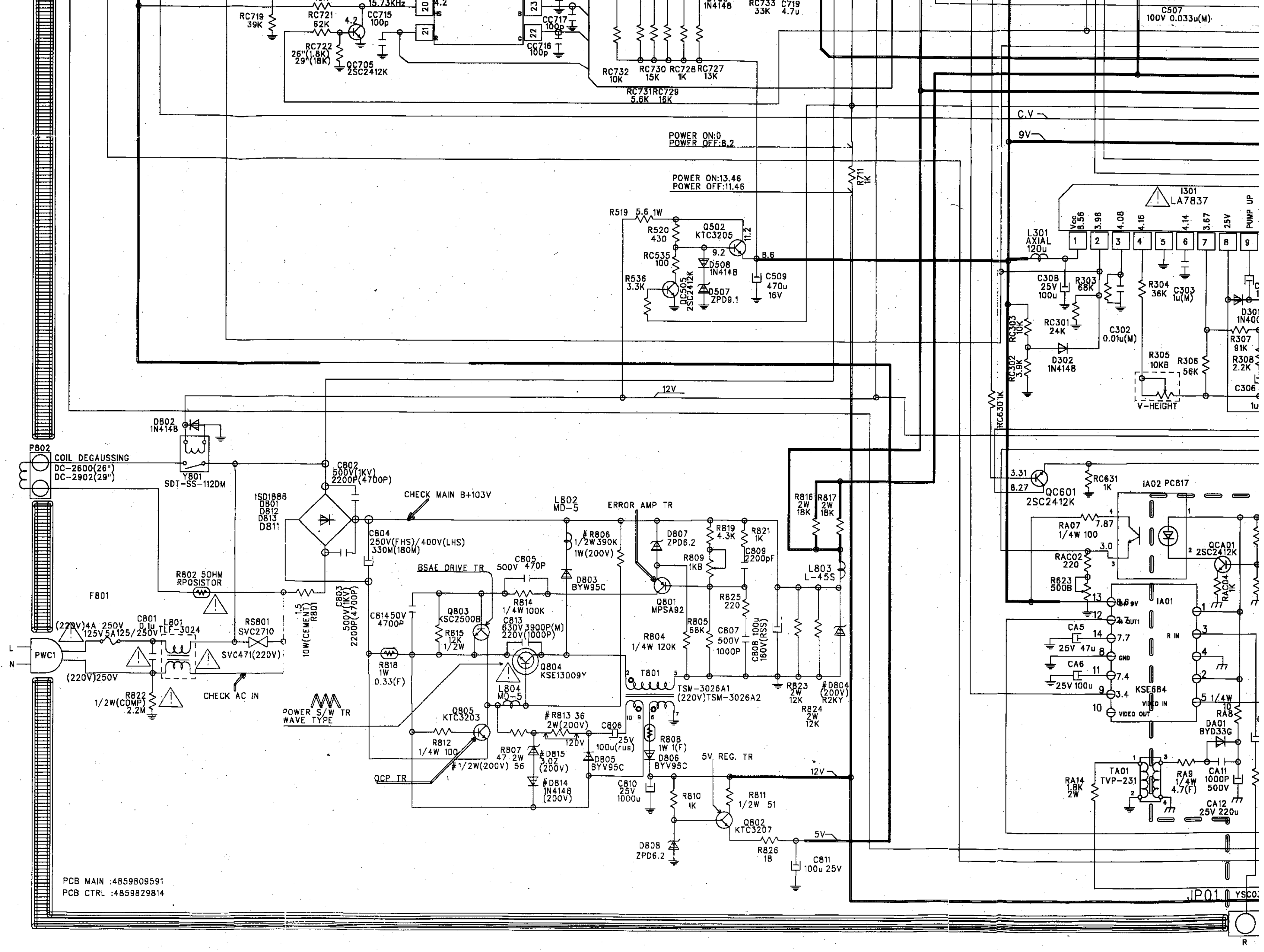
ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

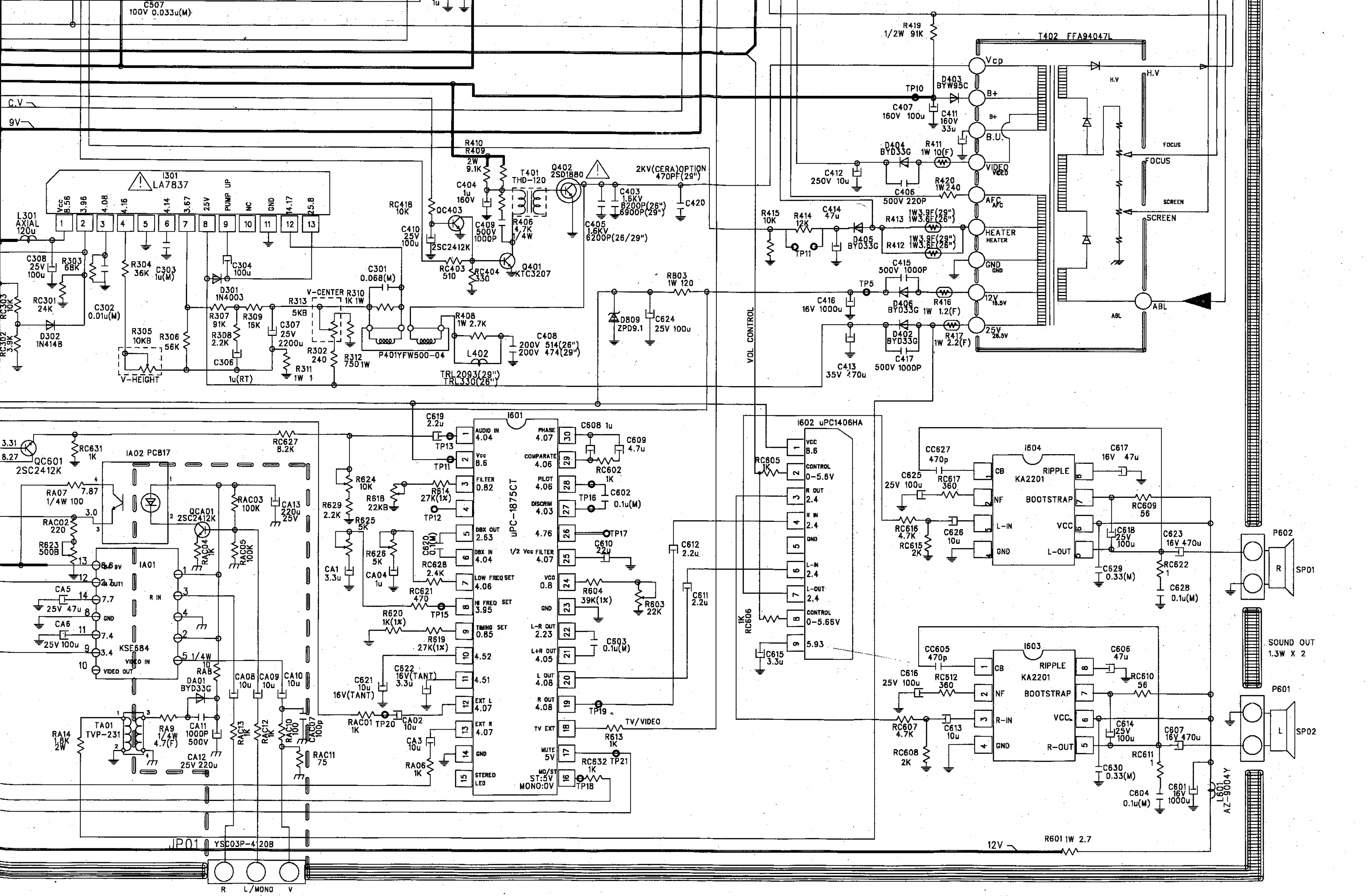
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I301 LA7837
I601 uPC-1875CT
I602 uPC1406HA
I603 KA2201
I604 KA2201
T402 FFA94047L
T401 THD-120
Q402 2SD1880
Q401 KTC3207
QC403 2SC2412K
QC601 2SC2412K
QCA01 2SC2412K
IA02 PCB17
IA01 KSE684
TA01 TVP-231
P401YFW500-04
VOL CONTROL
V-CENTER
V-HEIGHT
2KV(CERA)OPTION 470PF(29")
SOUND OUT 1.3W X 2
JP01 YSC03P-4120B
R L/MONO V
SP01
SP02
P601
P602
L601 AZ-9004Y
R601 1W 2.7
12V